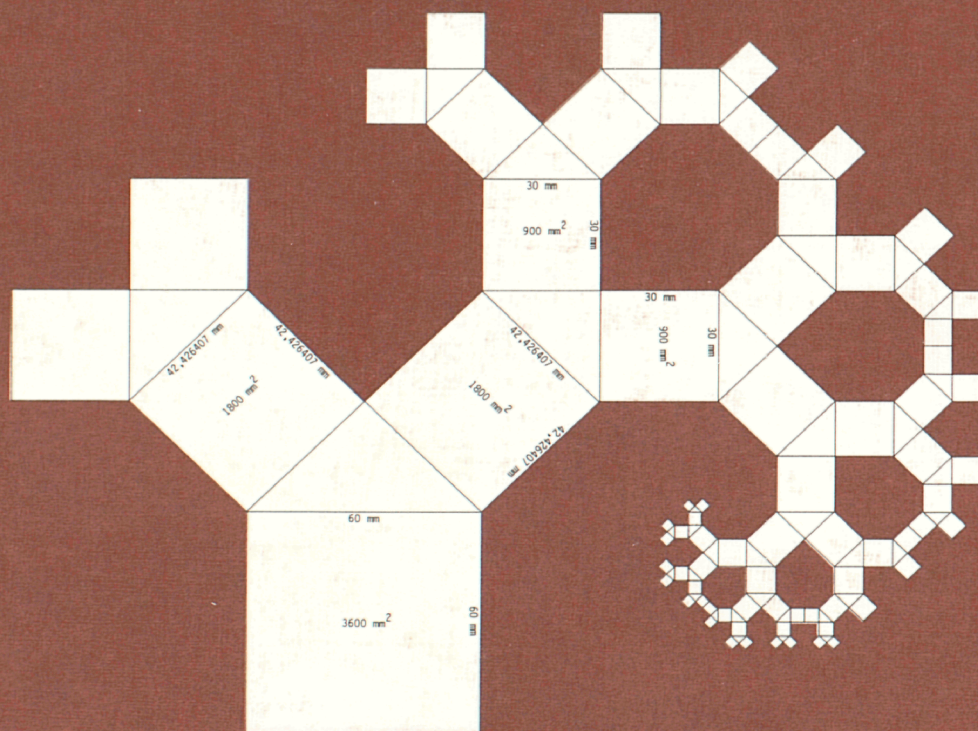


COST PROJECTS

COLLECTED AGREEMENTS

VOLUME 3 1983 — 1984



Council of the European Communities

COST Projects

Collected Agreements
concluded within the framework of European Cooperation
in the field of Scientific and Technical Research

Volume 3
1983 — 1984

COST SECRETARIAT
GENERAL SECRETARIAT OF THE COUNCIL OF THE EUROPEAN
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Foreword

This publication is the third volume of a collection which includes all the agreements concluded within the framework of European Cooperation in the field of Scientific and Technical Research, better known by its abbreviation COST.

There are 19 participant States in this form of cooperation, which was inaugurated in 1969 at the initiative of the Council of the European Communities, namely:

Belgium — Denmark — Federal Republic of Germany — Greece — Spain — France — Ireland — Italy — Yugoslavia — Luxembourg — Netherlands — Norway — Austria — Portugal — Switzerland — Finland — Sweden — Turkey — United Kingdom.

It enjoys special arrangements for cooperation with the Community as such, which, moreover, provides it with secretariat and infrastructure services.

The fields covered by COST cooperation in this volume are as follows:

1. Informatics
2. Telecommunications
3. Transport
4. Oceanography
5. Metallurgy and materials science
6. Environmental protection
7. Meteorology
8. Agriculture
9. Food technology
10. Medical and public health research
 - Wood
 - Recycling
 - Socio-technologies

The COST agreements are divided into four separate categories of cooperation:

CATEGORY I:

Community R & D programmes, adopted on the basis of the Treaties establishing the Communities, in which non-Community COST States may be involved;

CATEGORY II:

Projects initiated within the COST framework and in which the Community as such participates alongside the non-Community COST States;

CATEGORY III:

Projects initiated within the COST framework and in which the Community as well as its Member States and the non-Community COST States participate;

CATEGORY IV:

Projects initiated within the COST framework and in which COST States, whether or not members of the Community, participate, but not the Community as such.

The COST Agreements take very varied legal forms, ranging from international conventions in the classical sense to Memoranda of Understanding, the latter constituting an original instrument evolved within the COST framework itself.

More detailed information on COST cooperation is contained in a booklet published by the General Secretariat of the Council of the European Communities in November 1981.

We hope that this collection will meet the desires frequently expressed by all those interested in COST cooperation.

Stockholm, August 1985

Johann Martin-Löf
Chairman, COST Senior Officials

Abbreviations

ECSC	European Coal and Steel Community
EEC	European Economic Community
EAEC	European Atomic Energy Community (Euratom)
ACPM	Advisory Committee on Programme Management
COMAC	Steering Committee on Concerted Action
CREST	Scientific and Technical Research Committee
ESA	European Space Agency
IMCO	Intergovernmental Maritime Consultative Organization
JAF	Working Party on Legal, Administrative and Financial Questions
OECD	Organization for Economic Cooperation and Development
PREST	Scientific and Technical Research Policy

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**Agreement amending the
Community-COST Concertation Agreement
on a concerted action project in the
field of analysis of organic micropollutants
in water**

(COST Project 64b bis) ¹

¹ OJ L 378, 31.12.1982.

**Agreement amending the
Community-COST Concertation Agreement
on a concerted action project in the
field of analysis of organic micropollutants
in water**

(COST Project 64b bis)

THE EUROPEAN ECONOMIC COMMUNITY, hereinafter referred to as 'the Community',

NORWAY, PORTUGAL, SPAIN, SWEDEN, SWITZERLAND AND YUGOSLAVIA, hereinafter referred to as 'the participating non-member States',

WHEREAS the community-COST Concertation Agreement on a concerted action project in the field of analysis of organic micropollutants in water (COST Project 64b bis), hereinafter referred to as 'the Community-COST Concertation Agreement', concluded between the Community and the participating non-member States (hereinafter referred to as 'the Contracting Parties'), will expire on 3 November 1982;

WHEREAS, by its Decision of 3 March 1981, the Council of the European Communities adopted a sectoral research and development programme in the field of environment (environmental protection and climatology) — indirect and concerted actions — (1981-1985);

WHEREAS the abovementioned Decision lays down that the on-going Community concerted action project on analysis of organic micropollutants in water shall be extended to 31 December 1983;

WHEREAS the Contracting Parties have a mutual interest in the continuation of the research covered by the Community-COST Concertation Agreement;

WHEREAS the extension of the Community-COST Concertation Agreement will require a supplementary contribution from the Contracting Parties,

HAVE AGREED AS FOLLOWS:

Article 1

The Community-COST Concertation Agreement shall be extended from 3 November 1982 to 31 December 1983.

Article 2

The provisions of the Community-COST Concertation Agreement shall be amended as follows:

(1) paragraph III of Annex C shall be replaced by the following:

- III. The funds paid by participating non-member States shall be credited to the concerted action project as budget receipts allocated to a heading in the statement of the revenue of the Budget of the European Communities (Commission section)';

(2) The Annex to Annex C shall be replaced by the Annex to this Agreement.

Article 3

The maximum supplementary contributions by the Contracting Parties to the coordination costs for the period of extension shall be:

(a) 167 000 ECU from the Community

(b) 8 000 ECU from each participating non-member State.

The ECU shall be that defined by the Financial Regulation in force applicable to the general budget of the European Communities and by the financial arrangements adopted pursuant thereto.

Article 4

1. Each of the Contracting Parties shall, after signing this Agreement, notify the Secretary-General of the Council of the European Communities as soon as possible of the completion of the procedures necessary under its internal provisions for the implementation of this Agreement.

2. For the Contracting Parties which have forwarded the notification provided for in paragraph 1, this Agreement shall enter into force on 3 November 1982 provided that the Community and at least one of the participating non-member States has forwarded these notifications.

For those Contracting Parties which forward the notification after the entry into force of this Agreement, it shall come into force on the first day of the second month following the month in which the notification was forwarded.

Contracting Parties which have not forwarded this notification at the time of entry into force of this Agreement shall be able to take part in the work of the Committee without voting rights for a period of six months following the entry into force of this Agreement.

3. The Secretary-General of the Council of the European Communities shall notify each of the Contracting Parties of the deposit of the notifications provided for in paragraph 1 and of the date of the entry into force of this Agreement.

Article 5

This Agreement shall apply, on the one hand, to the territories in which the Treaty establishing the European Economic Community is applied and under the conditions laid down in that Treaty and, on the other hand, to the territories of the participating non-member States.

Article 6

This Agreement, drawn up in a single original in the Danish, Dutch, English, French, German, Greek and Italian languages, each text being equally authentic, shall be deposited in the archives of the General Secretariat of the Council of the European Communities which shall forward a certified copy to each of the Contracting Parties.

Done at Brussels on the third day of February in the year one thousand nine hundred and eighty-three.

Council Decision
of 17 December 1982
on the conclusion of the Agreement amending the
Community-COST Concertation Agreement
on a concerted project in the field of analysis of organic
micropollutants in water
(COST project 64b bis)
(82/889/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

HAVING regard to the Treaty establishing the European Economic Community,

HAVING regard to Council Decision 81/213/EEC of 3 March 1981 adopting a sectoral research and development programme in the field of environment (environmental protection and climatology) — indirect and concerted actions — (1981 to 1985) ¹ and in particular Article 8 (1) thereof,

HAVING regard to Council Decision 80/178/EEC of 18 December 1979 concerning the conclusion of the Agreement on a concerted action project in the field of analysis of organic micropollutants in water (COST 64b bis) ²,

HAVING regard to the draft Decision submitted by the Commission,

WHEREAS, pursuant to Article 8 (2) of Decision 81/213/EEC, the Commission has negotiated an Agreement with the third States participating in the abovementioned Concertation Agreement with a view to amending this Agreement;

WHEREAS this Agreement should be approved,

HAS DECIDED AS FOLLOWS:

Article 1

The Agreement between the European Economic Community, Norway, Portugal, Spain, Sweden, Switzerland and Yugoslavia amending the Community-COST Concertation Agreement on a concerted action project in the field of analysis of organic micropollutants in water (COST project 64b bis) is hereby approved on behalf of the Community.

The text of the Agreement is attached hereto.

Article 2

The President of the Council is hereby authorized to designate the persons empowered to sign the Agreement in order to bind the Community.

Done at Brussels, 17 December 1982.

For the Council

The President

H. Christophersen

¹ OJ L 101, 11.4.1981.

² OJ L 39, 15.2.1980.

ANNEX

Multiannual timetable for the concerted action project
'Analysis of organic micropollutants in water'
(COST Project 64b bis)

Budget item 7369: R & D in the sector of environment

(in ECU)

	1979		1980		1981		1982		1983		Total	
	CA	PA	CA	PA	CA	PA	CA	PA	CA	PA	CA	PA
I — Initial estimate of overall requirements (figures appearing in the timetable of commitments and in the correspondence table shown in Annex II to the Commission budget):												
- Staff	}											
- Administrative operating expenditure												
- Contracts												
Total (to be covered by appropriations entered in 7369)	126 000	126 000	121 000	121 000	126 000	126 000	107 000	107 000	167 000	167 000	647 000	647 000
II — Revised estimate of expenditure taking into account additional requirements arising from the accession of participating non-member States:												
- Staff	}											
- Administrative operating expenditure												
- Contracts												
	126 000	126 000	121 000	121 000	126 000	126 000	107 000	107 000	167 000	167 000	647 000	647 000
	6 × 8 000	6 × 8 000	6 × 8 000	6 × 8 000	6 × 8 000	6 × 8 000	6 × 8 000	6 × 8 000	6 × 8 000	6 × 8 000	240 000	240 000
New total	174 000	174 000	169 000	169 000	174 000	174 000	155 000	155 000	215 000	215 000	887 000	887 000
III — Difference between I and II to be covered by contributions from participating non-member States	6 × 8 000	6 × 8 000	6 × 8 000	6 × 8 000	6 × 8 000	6 × 8 000	6 × 8 000	6 × 8 000	6 × 8 000	6 × 8 000	240 000	240 000

CA: Commitment appropriation
PA: Payment appropriation

**Agreement amending the
Community-COST Concertation Agreement
on a concerted action project in the
field of analysis of organic
micropollutants in water
(COST Project 64b bis)**

Decision of Community programmes: 17.12.1982

Date of entry into force: 1.3.1983

Duration: 31.12.1983

Contracting Parties	Date of signing	Date of entry into force
EC	3.2.1983	1.3.1983
Spain	3.2.1983	'
Yugoslavia	3.2.1983	'
Norway	3.2.1983	'
Portugal	3.2.1983	'
Switzerland	3.2.1983	'
Sweden	3.2.1983	1.3.1983

¹ At the date of publication of this volume, Spain, Yugoslavia, Norway, Portugal and Switzerland had not ratified this Agreement.

**Memorandum of Understanding
for the implementation of a European research project
on corrosion in the construction industry**

(COST Project 502)

Memorandum of Understanding for the implementation of a European research project on corrosion in the construction industry

(COST Project 502)

The Signatories to this Memorandum of Understanding, declaring their common intention to take part in a European research project on corrosion in the construction industry, have reached the following understandings:

Section 1

1. The Signatories intend to cooperate in a project to promote research into corrosion in the construction industry (construction industry, other structures and off-shore industry) (hereinafter referred to as the 'Project')

2. The main aim of the Project is to develop and coordinate cooperative research with a view to making more efficient use of materials employed in the construction industry and to reducing losses due to corrosion.

3. The Signatories hereby declare their intention of carrying out the Project jointly, in accordance with the general description given in Annex II, adhering as far as possible to a timetable to be decided by the Management Committee referred to in Annex I.

4. The Project will be carried out through concerted action, in accordance with the provisions of Annex I.

5. The overall value of the activities of the Signatories under the Project is estimated at approximately 4 800 million ECU at 1982 prices.

6. The Signatories will make every effort to ensure that the necessary funds are made available under their internal financing procedures.

Section 2

1. Signatories intend to take part in the Project in one or several of the following ways:

(a) by carrying out studies and research in their technical services or public research establishments (hereinafter referred to as 'public research establishments');

(b) by concluding contracts for studies and research with organizations (hereinafter referred to as 'research contractors');

(c) by providing the Secretariat, including facilities and expertise required, and other coordinatory services or activities necessary for the aims of the Project to be achieved.

2. In order to ensure an efficient management of the Project, in particular with regard to the appreciation of research proposals, the coordination of work, the evaluation of results and the drawing up of the final report, the Signatories intend to place the necessary experts for a limited time at the disposal of the Management Committee referred to in Annex I.

3. The Signatories intend to promote inter-laboratory visits.

Section 3

1. This Memorandum of Understanding will take effect for three years upon signature by at least four Signatories. It may be terminated upon the entry into force of a Community/COST Concertation Agreement in the same field as that covered by this Memorandum of Understanding.

2. This Memorandum of Understanding may be amended in writing at any time by arrangement between the Signatories.

3. A Signatory which intends, for any reason whatsoever, to terminate its participation in the Project will notify the Secretary-General of the Council of the European Communities of its intention as soon as possible, preferably not later than three months beforehand.

4. If at any time the number of Signatories falls below four, the Management Committee referred to in Annex I will examine the situation which has arisen and will consider whether or not this Memorandum of Understanding should be terminated by decision of the Signatories.

Section 4

1. This Memorandum of Understanding will, for a period of six months from the date of the first signing, remain open for signing by the governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and by the European Communities.

The governments referred to in the first subparagraph and the European Communities may take part in the Project on a provisional basis during

the abovementioned period, even though they may not have signed this Memorandum of Understanding.

2. After this period of six months has elapsed, applications to sign this Memorandum of Understanding from the governments referred to in paragraph 1 or from the European Communities will be decided upon by the Management Committee referred to in Annex I, which may attach special conditions thereto.

3. Any Signatory may designate one or more competent public authorities or bodies to act on its behalf, in respect of the implementation of the Project.

Section 5

This Memorandum of Understanding is of an exclusively recommendatory nature. It will not create any binding legal effect in public international law.

Section 6

1. The Secretary-General of the Council of the European Communities will inform all Signatories of the signing dates and of the date of entry into effect of this Memorandum of Understanding and will forward to them all notices which he has received under this Memorandum of Understanding.

2. This Memorandum of Understanding will be deposited with the General Secretariat of the Council of the European Communities. The Secretary-General will forward a certified copy to each of the Signatories.

Done at Brussels on the tenth day of February in the year one thousand nine hundred and eighty-three.

ANNEX I

Coordination of the Project

CHAPTER I

1. A Management Committee (hereinafter referred to as 'the Committee') will be set up, composed of not more than two representatives for each Signatory. Each representative may be accompanied by such experts or advisers as he or she may need.

The governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and the European Communities may, in accordance with the second sub-paragraph of Section 4 point 1 of the Memorandum of Understanding, participate in the work of the Committee before becoming Signatories to the Memorandum without, however, having the right to vote.

2. The Committee will be responsible for coordinating the Project and, in particular, for making the necessary arrangements for:

- (a) the choice of research topics on the basis of those provided for in Annex II, including any modifications submitted to Signatories by the competent public authorities or bodies; any proposed changes to the Project framework will be referred for an opinion to the Committee of Senior Officials on Scientific and Technical Research (COST);
- (b) examining, selecting and adopting, on the basis of industrial priorities, research proposals made under the Project, while ensuring that each project forms the subject of collaboration between participants from two or more Signatories;
- (c) advising on the direction which work should take;
- (d) drawing up detailed plans and defining methods for the different phases of execution of the Project;
- (e) coordinating the contributions referred to in point 1 (c) of Section 2 of the Memorandum of Understanding;
- (f) choosing, in liaison with the Signatories concerned, the experts referred to in Section 2, point 2, of the Memorandum of Understanding, and for giving them instructions;
- (g) keeping abreast of the research being done in the territory of the Signatories and in other countries;
- (h) exchanging research results among the Signatories to the extent compatible with adequate safeguards for the interests of Signatories, their competent public authorities or bodies and research contractors in respect of industrial property rights and commercially confidential material;
- (i) promoting and organizing conferences in the field of the Project;
- (j) drawing up the annual interim reports and the final report to be submitted to the Signatories and circulated as appropriate;
- (k) dealing with any problem which may arise out of the execution of the Project, including those relating to possible special conditions to be attached to accession to the Memorandum of Understanding in the case of applications submitted more than six months after the date of the first signing.

3. The Committee will establish its rules of procedure.
4. The Secretariat of the Committee will be provided at the invitation of the Signatories by either the Commission of the European Communities or one of the Signatory States.

CHAPTER II

1. Signatories will invite public research establishments or research contractors in their territories to submit proposals for research work to their respective competent public authorities or bodies. Proposals accepted under this procedure will be submitted to the Committee.
2. Signatories will request public research establishments or research contractors, before the Committee takes any decision on a proposal, to submit to the public authorities or bodies referred to in paragraph 1, notification of previous commitments and industrial property rights which they consider might preclude or hinder the execution of the projects of the Signatories.

CHAPTER III

1. Signatories will require their public research establishments or research contractors to submit periodical progress reports and a final report.
2. Distribution of progress reports will be restricted to the representatives of the Signatories within the Committee. The Signatories will treat these progress reports as confidential and will not use them for purposes other than research work. The final reports on the results obtained will have much wider circulation, covering at least the Signatories' public research establishments or research contractors concerned.

CHAPTER IV

1. In order to facilitate the exchange of results referred to in Chapter I, paragraph 2 (h), and subject to national law, Signatories intend to ensure, through the inclusion of appropriate terms in research contracts, that the owners of industrial property rights and technical information resulting from work carried out in implementation of that part of the Project assigned to them under Annex II (hereinafter referred to as 'the research results') will be under an obligation, if so requested by another Signatory (hereinafter referred to as 'the applicant Signatory'), to supply the research results and to grant to the applicant Signatory or to a third party nominated by the applicant Signatory a licence to use the research results and such technical know-how incorporated therein as is necessary for such use if the applicant Signatory requires the granting of a licence for the execution of work in respect of the Project.

Such licences will be granted on fair and reasonable terms, having regard to commercial usage.

2. Signatories will, by including appropriate clauses in contracts placed with research contractors, provide for the licence referred to in paragraph 1 to be extended on fair and reasonable terms, having regard to commercial usage, to previous industrial property rights and to prior technical know-how acquired by the research contractor insofar as the research results could not otherwise be used for the purpose referred to in paragraph 1.

Where a research contractor is unable or unwilling to agree to such extension, the Signatory will submit the case to the Committee before the contract is concluded; hereafter, the Committee will state its position on the case, if possible after having consulted the interested parties.

3. Signatories will take any steps necessary to ensure that the fulfilment of the conditions laid down in this Chapter will not be affected by any subsequent transfer of rights to ownership of the research results. Any such transfer will be notified to the Committee.

4. If a Signatory terminates its participation in the Project, any rights of use which it has granted, or is obliged to grant, to, or has obtained from, other Signatories in application of the Memorandum of Understanding and concerning work carried out up to the date on which the said Signatory terminates its participation, will continue thereafter.

5. The provisions of paragraphs 1 to 4 will continue to apply after the period of operation of the Memorandum of Understanding has expired and will apply to industrial property rights as long as these remain valid and to unprotected inventions and technical know-how until such time as they pass into the public domain other than through disclosure by the licensee.

ANNEX II

General description of the Project

A. Introduction

Corrosion of metals is a problem of major importance in the European countries. Corrosion damage often determines the effective life of metallic structures, including reinforced concrete, and the annual cost of fighting or preventing corrosion has been estimated to be 2 - 4 % of the gross national product in industrialized countries.

The need to avoid or reduce corrosion damage often results in excessive use of materials through 'overdesign' or by the use of more expensive or strategic materials in resistant alloys or coatings and in metal used for surface protection.

In a number of important industries and technologies, problems of corrosion are predominant in setting the present limits of development. Examples may be found in civil engineering, offshore industries, in power plants, chemical industries, etc.

The corrosion phenomena have been the subject of numerous research projects in industries and in universities; much of the necessary fundamental knowledge is available and many very valuable methods of investigation have been developed. It has also been possible to develop new materials of construction and new methods of protection, especially for use in the chemical industries, where the corrosive environment can be particularly aggressive. It is, however, apparent that the existing fundamental knowledge is not always effectively applied in practice, and it seems especially promising to apply recently developed corrosion knowledge in certain industries and technologies, where these methods have been neglected or insufficiently exploited before.

B. Objectives

The basic considerations in the description of the research programme detailed in Chapter C have been:

- (a) to provide opportunities for collaboration, thereby reducing the costs of individual programmes through work-sharing;
- (b) to ensure that the Projects are related clearly to specific sectors of industry so that efficient transfer of the research results could be anticipated.

Some of the particular aims are as follows:

- (c) the application of new methods of corrosion research and corrosion prevention;
- (d) the better use of the strength of materials by avoiding corrosion problems often associated with heavily stressed materials;
- (e) the introduction of new technologies or processes, where the control of corrosion problems has been the key problem;
- (f) the safeguarding against the increased corrosivity of many environments, in the atmosphere, in water and in the soil;
- (g) the development and testing of new materials and methods of protection.

C. Research topics (examples)

1. Construction industry (civil engineering)

Reinforced concrete

- (a) Development of methods for detecting corrosion of steel in existing structures;
- (b) Accelerated electrochemical methods for the study of steel corrosion in concrete and for testing of concrete, additives and aggressive environments;
- (c) Development and evaluation of repair procedures and protection methods;
- (d) Accelerated methods for assessment of new constructions and design details;
- (e) Influence of dynamic loads on corrosion;
- (f) Protection of reinforcement steels by coatings or cathodic protection;
- (g) Interaction of embedded and external steel;
- (h) Corrosion and protection of reinforced concrete structures in natural marine environments.

2. Other structures

- (i) Corrosion and hydrogen embrittlement of high-strength steels;
- (ii) Corrosion fatigue, especially at low frequencies of high-strength materials and of stainless steels;
- (iii) Corrosion in distribution systems for hot water and central heating.

3. Offshore industry

- (a) Corrosion and protection of pipelines in the sea bed and of steel piles deeply embedded in the sea bed;
- (b) Corrosion and erosion in pipelines carrying multiphase mixtures of oil, water and gas;
- (c) Corrosion and cathodic protection of steel at various depths in natural seawater under conditions of natural fouling.

**Memorandum of Understanding
for the implementation of a European research project
on corrosion in the construction industry
(COST Project 502)**

Date of entry into force: 10.2.1983

Duration: 9.2.1986

Contracting Parties	Date of signing	Date of entry into force
EC	14. 3.1983	14. 3.1983
Belgium	30.11.1983	30.11.1983
Denmark	10. 2.1983	10. 2.1983
Germany (FR of)	10. 2.1983	10. 2.1983
Netherlands	13. 7.1983	13. 7.1983
United Kingdom	10. 2.1983	10. 2.1983
Austria	16. 1.1984	16. 1.1984
Finland	10. 2.1983	10. 2.1983
Sweden	10. 2.1983	10. 2.1983

**Memorandum of Understanding
for the implementation of a European research project
on castings technology**

(COST Project 504)

Memorandum of Understanding for the implementation of a European research project on castings technology

(COST Project 504)

The Signatories to this Memorandum of Understanding, declaring their common intention to take part in a European research project on castings technology, have reached the following understandings:

Section 1

1. The Signatories intend to cooperate in a project to promote research into castings technology:

- (a) direct castings of close to final shape semi-finished products;
 - (b) improving the productivity and quality of nodular cast iron;
 - (c) influence of metallurgy factors,
- (hereinafter referred to as the 'Project').

2. The main aim of the Project is to develop and coordinate cooperative research to encourage the use of new techniques to manufacture products of better quality and ensure the competitiveness of the industry.

3. The Signatories hereby declare their intention of carrying out the Project jointly, in accordance with the general description given in Annex II, adhering as far as possible to a timetable to be decided by the Management Committee referred to in Annex I.

4. The Project will be carried out through concerted action, in accordance with the provisions of Annex I.

5. The overall value of the activities of the Signatories under the Project is estimated at approximately 6 million ECU at 1982 prices.

6. The Signatories will make every effort to ensure that the necessary funds are made available under their internal financing procedures.

Section 2

1. Signatories intend to take part in the Project in one or several of the following ways:

- (a) by carrying out studies and research in their technical services or public research establishments (hereinafter referred to as 'public research establishments');
- (b) by concluding contracts for studies and research with organizations (hereinafter referred to as 'research contractors');
- (c) by providing the Secretariat, including facilities and expertise required, and other coordinatory services or activities necessary for the aims of the Project to be achieved.

2. In order to ensure an efficient management of the Project, in particular with regard to the appreciation of research proposals, the coordination of work, the evaluation of results and the drawing up of the final report, the Signatories intend to place the necessary experts for a limited time at the disposal of the Management Committee referred to in Annex I.

3. The Signatories intend to promote inter-laboratory visits.

Section 3

1. This Memorandum of Understanding will take effect for three years upon signature by at least five Signatories.

2. This Memorandum of Understanding may be amended in writing at any time by arrangement between the Signatories.

3. A Signatory which intends, for any reason whatsoever, to terminate its participation in the Project will notify the Secretary-General of the Council of the European Communities of its intention as soon as possible, preferably not later than three months beforehand.

4. If at any time the number of Signatories falls below four, the Management Committee referred to in Annex I will examine the situation which has arisen and will consider whether or not this Memorandum of Understanding should be terminated by decision of the Signatories.

Section 4

1. This Memorandum of Understanding will, for a period of six months from the date of the first signing, remain open for signing by the governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and by the European Communities.

The governments referred to in the first subparagraph and the European Communities may take part in the Project on a provisional basis during the above mentioned period even though they may not have signed this Memorandum of Understanding.

2. After this period of six months has elapsed, applications to sign this Memorandum of Under-

standing from the governments referred to in paragraph 1 or from the European Communities will be decided upon by the Management Committee referred to in Annex I, which may attach special conditions thereto.

3. Any Signatory may designate one or more competent public authorities or bodies to act on its behalf, in respect of the implementation of the Project.

Section 5

This Memorandum of Understanding is of an exclusively recommendatory nature. It will not create any binding legal effect in public international law.

Section 6

1. The Secretary-General of the Council of the European Communities will inform all Signatories of the signing dates and of the date of entry into effect of this Memorandum of Understanding and will forward to them all notices which he has received under this Memorandum of Understanding.

2. This Memorandum of Understanding will be deposited with the General Secretariat of the Council of the European Communities. The Secretary-General will forward a certified copy to each of the Signatories.

Done at Brussels on the tenth day of February in the year one thousand nine hundred and eighty-three.

ANNEX I

Coordination of the Project

CHAPTER I

1. A Management Committee (hereinafter referred to as 'the Committee') will be set up, composed of not more than two representatives for each Signatory. Each representative may be accompanied by such experts or advisors as he or she may need.

The governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and the European Communities may, in accordance with the second sub-paragraph of Section 4 point 1 of the Memorandum of Understanding, participate in the work of the Committee before becoming Signatories to the Memorandum without, however, having the right to vote.

2. The Committee will be responsible for coordinating the Project and, in particular, for making the necessary arrangements for:

- (a) the choice of research topics on the basis of those provided for in Annex II, including any modifications submitted to Signatories by the competent public authorities or bodies; any proposed changes to the Project framework will be referred for an opinion to the Committee of Senior Officials on Scientific and Technical Research (COST);
- (b) examining, selecting and adopting, on the basis of industrial priorities, research proposals made under the Project, while ensuring that each project forms the subject of collaboration between participants from two or more Signatories;
- (c) advising on the direction which work should take;
- (d) drawing up detailed plans and defining methods for the different phases of execution of the Project;
- (e) coordinating the contributions referred to in point 1 (c) of Section 2 of the Memorandum of Understanding;
- (f) choosing, in liaison with the Signatories concerned, the experts referred to in Section 2, point 2, of the Memorandum of Understanding, and for giving them instructions;
- (g) keeping abreast of the research being done in the territory of the Signatories and in other countries;
- (h) assuring the necessary coordination with the Community activities in the same field;
- (i) exchanging research results among the Signatories to the extent compatible with adequate safeguards for the interests of Signatories, their competent public authorities or bodies and research contractors in respect of industrial property rights and commercially confidential material;
- (j) promoting and organizing conferences in the field of the Project;
- (k) drawing up the annual interim reports and the final report to be submitted to the Signatories and circulated as appropriate;
- (l) dealing with any problem which may arise out of the execution of the Project, including those relating to possible special conditions to be attached to accession to the Memorandum of Understanding in the case of applications submitted more than six months after the date of the first signing.

3. The Committee will establish its rules of procedure.
4. The Secretariat of the Committee will be provided at the invitation of the Signatories by either the Commission of the European Communities or one of the Signatory States.

CHAPTER II

1. Signatories will invite public research establishments or research contractors in their territories to submit proposals for research work to their respective competent public authorities or bodies. Proposals accepted under this procedure will be submitted to the Committee.
2. Signatories will request public research establishments or research contractors, before the Committee takes any decision on a proposal, to submit to the public authorities or bodies referred to in paragraph 1 notification of previous commitments and industrial property rights which they consider might preclude or hinder the execution of the projects of the Signatories.

CHAPTER III

1. Signatories will require their public research contractors to submit periodical progress reports and a final report.
2. Distribution of progress reports will be restricted to the representatives of the Signatories within the Committee. The Signatories will treat these progress reports as confidential and will not use them for purposes other than research work. The final reports on the results obtained will have much wider circulation, covering at least the Signatories' public research establishments or research contractors concerned.

CHAPTER IV

1. In order to facilitate the exchange of results referred to in Chapter I, paragraph 2 (i), and subject to national law, Signatories intend to ensure, through the inclusion of appropriate terms in research contracts, that the owners of industrial property rights and technical information resulting from work carried out in implementation of that part of the Project assigned to them under Annex II (hereinafter referred to as 'the research results') will be under an obligation, if so requested by another Signatory (hereinafter referred to as 'the applicant Signatory'), to supply the research results and to grant to the applicant Signatory or to a third party nominated by the applicant Signatory a licence to use the research results and such technical know-how incorporated therein as is necessary for such use if the applicant Signatory requires the granting of a licence for the execution of work in respect of the Project.

Such licences will be granted on fair and reasonable terms, having regard to commercial usage.

2. Signatories will, by including appropriate clauses in contracts placed with research contractors, provide for the licence referred to in paragraph 1 to be extended on fair and reasonable terms, having regard to commercial usage to previous industrial property rights and to prior technical know-how acquired by the research contractor insofar as the research results could not otherwise be used for the purpose referred to in paragraph 1.

Where a research contractor is unable or unwilling to agree to such extension, the Signatory will submit the case to the Committee before the contract is concluded; hereafter, the Committee will state its position on the case, if possible after having consulted the interested parties.

3. Signatories will take any steps necessary to ensure that the fulfilment of the conditions laid down in this Chapter will not be affected by any subsequent transfer of rights to ownership of the research results. Any such transfer will be notified to the Committee.

4. If a Signatory terminates its participation in the Project, any rights of use which it has granted, or is obliged to grant, to, or has obtained from, other Signatories in application of the Memorandum of Understanding and concerning work carried out up to the date on which the said Signatory terminates its participation, will continue thereafter.

5. The provisions of paragraphs 1 to 4 will continue to apply after the period of operation of the Memorandum of Understanding has expired and will apply to industrial property rights as long as these remain valid and to unprotected inventions and technical know-how until such time as they pass into the public domain other than through disclosure by the licensee.

ANNEX II

General description of the Project

A. Introduction

Manufacturing industries in all countries rely heavily upon castings or semi-finished cast shapes as components or preforms to create end-products or construct plant and equipment for use by other industries. Typical uses of cast materials ranging from steel to lead alloys are the castings used in the production of engines for vehicles and cast preforms used as the first stage in the production of semi-manufactures such as sheet, strip, section, bar, rod and wire. Casting occurs at a very early stage in the process of manufacture and the quality, cost and rate of production of a finished product are significantly influenced by the effectiveness of the casting technology.

Since it is difficult to attract highly trained men to work in conditions that are generally arduous and unpleasant, great reliance is placed upon experience and skill and upon the transfer of experience from the older to the younger man. Therefore there is an urgent need to introduce higher levels of technology to improve working conditions and thereby attract suitably skilled employees to the modernized foundry industry.

The foundry industry is largely composed of relatively small companies, in general employing between a few and several hundred employees. Similarly, with the exception of the fully integrated steel and aluminium producers, the industry concerned with semi-manufacturing is also medium-sized. Resources for research and development tend therefore to be very limited and the industry relies heavily upon independent research organizations to carry out research on its behalf.

In Europe there are a number of highly competent research organizations active in the field of casting technology. However, because of limited funding, the total effort is relatively small, particularly when account is taken of the wide range of materials produced in cast form and the large number of companies engaged in casting.

There is therefore considerable scope for increased effort on an international basis in the field of casting technology, an area which has received only limited support in the past yet is so vital to most manufacturing industry.

Cooperative research would reduce the risks for a single party during the development of a new aspect of technology yet lead to a raising of standards for all those participating. At the same time, by raising the level of technology available to the industry it should be possible to raise productivity, improve product reliability and reduce energy and material usage.

The participation of the representatives of producers of materials, manufacturers of structural elements and users in the running of the programme is anticipated.

B. Objectives

The basic considerations in the description of the project have been:

- (a) to provide opportunities for cooperation between industrial and research organizations in Europe (excluding steel and aluminium producers, the foundry industry is largely composed of relatively small companies);

- (b) to improve working conditions;
- (c) to support and coordinate these activities to improve the competitive position of the industry;
- (d) to provide collaborative research on a wide range of topics of particular relevance to the industry.

C. Research activities (examples)

1. Direct casting of close to final shape semi-finished products (included are some proposals for similar activities)

- (a) New direct casting methods for steel;
- (b) Horizontal continuous casting process for rods and other shapes of high melting alloys, especially stainless steels;
- (c) Continuous strip casting with a speed which allows the coupling with a hot rolling mill of sufficient productivity;
- (d) Method for the calculation of internal stresses and prediction of cracking occurring during the continuous casting process;
- (e) Quantitative evaluation of secondary cooling for the continuous casting process working with a water film;
- (f) Research related to grain refinement during the solidification of technical important alloys (especially steels, copper alloys, nickel alloys);
- (g) Characterizing the purity of the alloys detailed above and of aluminium alloys, especially by means of large surface metallography.

2. Improving the productivity and quality of nodular cast iron (S. G. iron), steel and non-ferrous castings

- (a) Riserless casting of nodular iron (S. G. iron);
- (b) Feeding technique and module-dependent feeding for nodular iron;
- (c) Production of larger thin walled castings of nodular iron;
- (d) General study of the production of thin sections in conjunction with the production referred to in the third indent;
- (e) Continuous treatment of cast iron for the production of nodular iron;
- (f) Determination of properties of components made in nodular iron;
- (g) Heat resistant coatings on moulds for steel castings;
- (h) Casting in chemical bonded sands;
- (i) Making permanent moulds with a lifetime of more than about 50 castings;
- (j) Process control for casting technology;
- (k) Use of robots in foundries, user experience and requirements for further development;

- (l) Automation and reproducibility of production in the foundry;
- (m) Production of fine-grained casting materials by use of special inoculants;
- (n) Injection metallurgy in foundries;
- (o) Improvement of the non-destructive testing methods for castings;
- (p) Evaluation of the use of energy in the foundry according to the process used.

3. Influence of metallurgical factors (especially purity) of primary and secondary aluminium alloys upon casting process technology and properties of castings (included are some proposals for similar activities)

- (a) Characterization of the purity of aluminium cast products especially by means of large surface metallography;
- (b) Influence of Na- and/or Li-impurities in the ppm range in primary aluminium upon oxidation rate, structure and morphology of oxide layers and their mechanical properties;
- (c) Influence of impurities from recycled aluminium scraps on castability and properties of aluminium alloys;
- (d) Development of production technology for pore-free die castings;
- (e) Development of methods which lead to increased production rate of light metal castings;
- (f) Comparison of properties of European aluminium casting alloys;
- (g) Research on spherical crystallization of Silicon in eutectic and hypereutectic Aluminium-Silicon casting alloys;
- (h) Development and improvement of the casting of Titanium alloys;
- (i) Recycling or substitution of metals that are geographically or economically vulnerable.

D. Priorities in the execution of the programme

- (i) Direct casting of close to final shape semi-finished products of base metal alloys with melting points above 1 000 ° C including steels (especially stainless steel);
- (ii) Improving the productivity and quality of nodular cast iron (S. G. iron), steel and non-ferrous castings;
- (iii) Influence of metallurgical factors (e.g. purity) of primary and secondary aluminium alloys upon casting process technology and properties of castings.

**Memorandum of Understanding
for the implementation of a European research project
on castings technology
(COST Project 504)**

Date of entry into force: 10.2.1983

Duration: 9.2.1986

Contracting Parties	Date of signing	Date of entry into force
EC	14. 3.1983	14. 3.1983
Belgium	30.11.1983	30.11.1983
Germany (FR of)	10. 2.1983	10. 2.1983
France	10. 2.1983	10. 2.1983
United Kingdom	10. 2.1983	10. 2.1983
Austria	16. 1.1984	16. 1.1984
Switzerland	2. 8.1983	2. 8.1983
Finland	10. 2.1983	10. 2.1983
Sweden	10. 2.1983	10. 2.1983

**Community-COST Concertation Agreement
on a concerted action project
in the field of shore-based
marine navigation aid systems
(COST Project 301) ¹**

¹ OJ L 84, 30.3.1983.

**Community-COST Concertation Agreement
on a concerted action project
in the field of shore-based
marine navigation aid systems**

(COST Project 301)

THE EUROPEAN ECONOMIC COMMUNITY,
hereinafter referred to as 'the Community',

and

THE SIGNATORY STATES TO THIS AGREEMENT,
hereinafter referred to as 'the participating non-member States'

WHEREAS a European concerted action project in the field of marine navigation aid systems may contribute to the reduction of the risk of accidents in coastal areas and ports and, consequently, to the protection of human life and the safety of ships and their cargo, and the prevention of pollution on the shore and in coastal waters;

WHEREAS a research programme in the field of maritime navigation aid systems was proposed in 1979 by Finnish and French delegations within the framework of European Cooperation in the field of Scientific and Technical Research (COST);

WHEREAS by its Decision of 13 December 1982 the Council of the European Communities adopted a Community concerted action project in the field of shore-based marine navigation aid systems;

WHEREAS the Member States of the Community and the participating non-member States, hereinafter referred to as 'the States', intend, subject to the rules and procedures applicable to their national programmes, to carry out the research described in Annex A and are prepared to integrate such research into a process of concertation which they consider will be of mutual benefit;

WHEREAS international organizations are carrying out projects in this field; whereas account should be taken of such projects so as to preclude duplication of effort, and whereas certain equipment and procedures should, if appropriate, be the subject of agreements within the framework of the competent organizations;

WHEREAS the implementation of the research covered by the concerted action project will require a financial contribution of approximately 13 million ECU from the States,

HAVE AGREED AS FOLLOWS:

Article 1

The Community and the participating non-member States, hereinafter referred to as 'the Contracting Parties', shall participate for a period extending until 31 December 1985 in a concerted action project in the field of shore-based marine navigation aid systems.

This project shall consist in concertation between the Community concerted action programme and the corresponding programmes of the participating non-Member States. Research areas covered by this Agreement are listed in Annex A.

The States shall remain entirely responsible for the research carried out by their national institutions or bodies.

Article 2

A Community-COST Concertation Committee on action for shorebased marine navigation aid systems, hereinafter referred to as 'the Committee', is hereby set up, within which concertation between the Contracting Parties shall be effected.

The Committee shall draw up its rules of procedure. Its Secretariat will be provided by the Commission of the European Communities, hereinafter referred to as 'the Commission'.

The terms of reference and the composition of this Committee are defined in Annex B.

Article 3

In order to ensure optimum efficiency in the execution of this concerted action project, a project leader shall be appointed by the Commission in agreement with the delegates representing the participating non-member States on the Committee.

Article 4

The maximum financial contribution by the Contracting Parties to the period referred to in the first paragraph of Article 1 shall be:

- (a) 2 100 000 ECU from the Community,
- (b) 60 000 ECU from each participating non-member State.

In addition, each participating non-member State shall pay an amount calculated by applying to a basic amount of 1 500 000 ECU, representing a part of the Community contribution, the ratio between the gross domestic product of the State concerned for 1980 and the sum of the gross domestic product of the Community and of that State for 1980.

The ECU is defined by the Financial Regulation applicable to the general budget of the European Communities and by the financial arrangements adopted pursuant thereto.

The rules governing the financing of this Agreement are set out in Annex C.

Article 5

1. Through the Committee, the States shall exchange all useful information resulting from the execution of the research covered by the concerted action project. They shall also endeavour to provide information on similar research planned or carried out by other bodies. Any information shall be treated as confidential if the State which provides it so requests.

2. In agreement with the Committee, the Commission shall prepare annual progress reports on the basis of the information supplied and shall forward them to the States.

3. At the end of the concertation period, the Commission shall, in agreement with the Committee, forward to the States a consolidated report on the execution and results of the project. This report shall be published by the Commission not later than six months after it has been forwarded, unless a State objects. In that case the report shall be treated as confidential and shall be forwarded, on request and with the agreement of the Committee, solely to the institutions and undertakings whose research or production activities justify access to knowledge resulting from the performance of the research covered by the concerted action project.

Article 6

1. This Agreement shall be open for signature by the Community and by the non-member States of that Community which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971.

2. As a condition precedent to its participation in the concerted action project defined in Article 1, each of the Contracting Parties shall, after signing this Agreement, have notified the Secretary-General of the Council of the European Communities not later than 31 December 1983 of the completion of the procedures necessary under its internal provisions for the implementation of this Agreement.

3. For the Contracting Parties which have transmitted the notification provided for in paragraph 2, this Agreement shall come into force on the first day of the month following that in which the Community and at least one of the participating non-member States transmitted these notifications.

For those Contracting Parties which transmit the notification after the entry into force of this Agreement, it shall come into force on the first day of the second month following the month in which the notification was transmitted.

Contracting Parties which have not transmitted this notification when this Agreement comes into force shall be able to take part in the work of the Committee without voting rights until 31 December 1983.

4. The Secretary-General of the Council of the European Communities shall inform each of the Contracting Parties of the notifications provided for in paragraph 2 and of the date of entry into force of this Agreement.

Article 7

This Agreement shall apply, on the one hand, to the territories in which the Treaty establishing the European Economic Community is applied, under the conditions laid down in that Treaty and, on the other hand, to the territories of the participating non-member States.

Article 8

This Agreement, drawn up in a single original in the Danish, Dutch, English, French, German, Greek and Italian languages, each text being equally authentic, shall be deposited in the archives of the General Secretariat of the Council of the European Communities which shall transmit a certified copy to each of the Contracting Parties.

Done at Brussels on the fifteenth day of April in the year one thousand nine hundred and eighty-three.

Council Decision
of 28 March 1983
on the conclusion of a Community-COST Concertation Agreement on a
concerted action project
in the field of shore-based marine navigation aid systems
(COST Project 301)
(83/124/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

HAVING regard to the Treaty establishing the European Economic Community,

HAVING regard to Council Decision 82/887/EEC of 13 December 1982 adopting a concerted action project for the European Economic Community in the field of shore-based marine navigation aid systems¹, and in particular Article 6 thereof,

HAVING regard to the Council Decision of 4 May 1982 authorizing the Commission to negotiate an Agreement between the Community and the non-member States participating in the European cooperation in the field of scientific and technical research for the implementation of a concerted action project on shore-based marine navigation aid systems,

HAVING regard to the draft Decision submitted by the Commission,

WHEREAS the Commission has completed the negotiations concerning the Agreement in question; whereas the Agreement should therefore be approved,

HAS DECIDED AS FOLLOWS:

Article 1

The Community-COST Concertation Agreement on a concerted action project in the field of shore-based marine navigation aid systems (COST Project 301) is hereby approved on behalf of the Community.

The text of the Agreement is attached to this Decision.

Article 2

The President of the Council is hereby authorized to designate the persons empowered to sign the Agreement in order to bind the Community.

Done at Brussels, 28 March 1983.

For the Council

The President

J. Ertl

¹ OJ L 378, 31.12.1982.

ANNEX A

I. Content of the Concerted Action Project

1. A study of requirements for precise navigation and ship manoeuvring in confined areas under various hydro-meteorological conditions.
2. A study to develop factors and criteria that can serve as a common determinant for marine traffic problem definition. As a second stage application of these factors and criteria to European waters.
3. An inventory of existing shore-based marine traffic systems in Western Europe, stating:
 - (a) geographical coverage;
 - (b) type of service provided;
 - (c) rules governing operation of the service;
 - (d) traffic intensity in the area;
 - (e) types of traffic in the area
4. A study of vessel identification methods, for use both in the control of traffic by the monitoring stations and in ship-to-ship communications.
5. A study of methods to enable the monitoring stations to pinpoint and track a vessel with accuracy.
6. Methods of shore-to-ship and ship-to-ship communication and data exchange systems between monitoring stations and ships.
7. A study of the harmonization of the procedure of traffic, information and guidance services for shipping in Western Europe.

II. Research areas covered by the agreement

1. Movement of ships in confined areas.
2. (a) Criteria for standard identification of problem areas for marine traffic.
 - (b) Identification of problem areas for marine navigation.
3. Inventory of shore-based marine traffic systems in Western Europe.
4. Identification of ships.
5. Specifications and standards for pinpointing and precise tracking of ships under way.
6. Shore-to-ship communication methods.
7. Harmonization of the procedures of traffic services.

Among the international organizations with most competence in this area which have been or are working on the above research topics are the following:

- (i) International Maritime Organisation (IMO);
- (ii) International Association of Lighthouse Authorities (IALA);
- (iii) International Association of Ports and Harbours (IAPH).

This list is not exhaustive.

ANNEX B

Terms of Reference and Composition of the Community-COST Concertation Committee 'Action for shore-based marine navigation aid systems'

1. The Committee shall:

- 1.1. contribute to the optimum implementation of the Project by giving its opinion on all aspects of its progress;
- 1.2. evaluate the results of the Project and draw conclusions as to their application;
- 1.3. be responsible for the exchange of information referred to in Article 5 (1);
- 1.4. keep track of national research work carried out in the fields covered by the Project, in particular by keeping itself informed about scientific and technical developments which might have an influence on its implementation;
- 1.5. take care to avoid duplicating studies and research work being carried out by the competent international organizations, taking account of the international framework in which certain provisions should, where necessary, be adopted;
- 1.6. provide guidelines for the project leader;
- 1.7. assist the Commission in the selection of contractors and the allocation of the corresponding appropriations.

2. The reports and opinions of the Committee shall be transmitted to the States.

3. The Committee shall be composed of one delegate from the Commission, as coordinator of the Community concerted action project, one delegate from each participating non-member State, one delegate from each Member State representing its national programme and the project leader.

Each delegate may be accompanied by experts. Wherever it deems it is useful, the Committee may invite observers from the relevant international organizations (see Annex A).

ANNEX C

Financing Rules

Article 1

This Annex lays down the financial rules referred to in Article 4 of the Community-COST Concertation Agreement.

Article 2

At the beginning of each financial year, the Commission shall send to each of the participating non-member States a call for funds corresponding to its share of the annual coordination costs under the Agreement, calculated in proportion to the maximum amounts laid down in Article 4 of the Agreement.

This contribution shall be expressed both in ECU and the currency of the participating non-member State concerned, the value of the ECU being defined in the Financial Regulation applicable to the general budget of the European Communities and its value determined on the date of the call for funds.

The total contributions shall cover the travel and subsistence costs of the delegates to the Committee, in addition to the coordination costs proper.

Each participating non-member State shall pay its annual contribution to the coordination costs under the Agreement at the beginning of each year, and by 31 March at the latest. Any delay in the payment of the annual contribution shall give rise to the payment of interest by the participating non-member State concerned at a rate equal to the highest discount rate obtaining in the States on the due date. The rate shall be increased by 0.25 of a percentage point for each month of delay. The increased rate shall be applied to the entire period of delay. However, such interest shall be chargeable only if payment is effected more than three months after the issue of a call for funds by the Commission.

Article 3

The funds paid by participating non-member States shall be credited to the concerted action project as budget receipts allocated to a heading in the statement of the revenue of the general Budget of the European Communities (Commission section).

Article 4

The provisional timetable for the coordination costs referred to in Article 4 of the Agreement is annexed.

Article 5

The Financial Regulation applicable to the general budget of the European Communities shall apply to the management of the appropriations.

Article 6

At the end of each financial year, a statement of appropriations for the concerted action project shall be prepared and transmitted to the participating non-member States for information.

Provisional time-table for the coordination costs relating to the concerted action project
on shore-based marine navigation aid systems
(COST Project 301)

(ECU)

	1983	1984	1985	Total
I Initial estimate of overall requirements				
(a) Staff	} 200 000	200 000	200 000	600 000
(b) Administrative operating expenditure				
(c) Contracts for studies	600 000	800 000	100 000	1 500 000
Total	800 000	1 000 000	300 000	2 100 000
II Revised estimate of expenditure taking into account additional requirements arriving from the accession of participating non-member States				
(a) Staff	} 800 000 + $\sum_i a_i$	1 000 000 + $\sum_i b_i$	300 000 + $\sum_i c_i$	2 100 000 + $\sum_i a_i$ + $\sum_i b_i$ + $\sum_i c_i$
(b) Administrative operating expenditure				
(c) Contracts for studies				
III Difference between I and II to be covered by contribution from participating non-member States.	$\sum_i a_i$	$\sum_i b_i$	$\sum_i c_i$	$\sum_i a_i$ + $\sum_i b_i$ + $\sum_i c_i$

$$a_i = 20\,000 + 600\,000 \frac{GDP_{pns}}{GDP_{EC} + GDP_{pns}}$$

$$b_i = 20\,000 + 800\,000 \frac{GDP_{pns}}{GDP_{EC} + GDP_{pns}}$$

$$c_i = 20\,000 + 100\,000 \frac{GDP_{pns}}{GDP_{EC} + GDP_{pns}}$$

GDP = Gross Domestic Product

pns = participating non-member State

EC = European Community

**Community-COST Concertation Agreement
on a concerted action project
in the field of shore-based
marine navigation aid systems
(COST Project 301)**

Decision of Community programmes: 13.12.1982

Date of entry into force: 1.2.1984

Duration: 31.12.1985

Contracting Parties	Date of signing	Date of entry into force
EC	15. 4.1983	1.2.1984
Spain	20.12.1983	¹
Norway	20.12.1983	1.2.1984
Finland	15. 4.1983	¹
Sweden	30. 5.1983	¹

¹ At the date of publication of this volume, Spain, Finland and Sweden had not ratified this Agreement.

**Memorandum of Understanding
for the implementation of a European research project
on powder metallurgy
(COST Project 503)**

Memorandum of Understanding for the implementation of a European research project on powder metallurgy

(COST Project 503)

The Signatories to this Memorandum of Understanding, declaring their common intention to take part in a European research project on powder metallurgy, have reached the following understandings:

Section 1

1. The Signatories intend to cooperate in a project to promote research into powder metallurgy (hereinafter referred to as the 'Project').

2. The main aim of the Project is to develop and coordinate cooperative research with a view to maintaining and strengthening the competitive position of the European powder metallurgy industry by increasing its technological capacity for the processing of powder.

3. The Signatories hereby declare their intention of carrying out the Project jointly, in accordance with the general description given in Annex II, adhering as far as possible to a timetable to be decided by the Management Committee referred to in Annex I.

4. The Project will be carried out through concerted action, in accordance with the provisions of Annex I.

5. The overall value of the activities of the Signatories under the Project is estimated at approximately 6 000 million ECU at 1982 prices.

6. The Signatories will make every effort to ensure that the necessary funds are made available under their internal financing procedures.

Section 2

1. Signatories intend to take part in the Project in one or several of the following ways:

(a) by carrying out studies and research in their technical services or public research establishments (hereinafter referred to as 'public research establishments');

(b) by concluding contracts for studies and research with organizations (hereinafter referred to as 'research contractors');

(c) by providing the Secretariat, including facilities and expertise required, and other coordinatory services or activities necessary for the aims of the Project to be achieved.

2. In order to ensure an efficient management of the Project, in particular with regard to the appreciation of research proposals, the coordination of work, the evaluation of results and the drawing up of the final report, the Signatories intend to place the necessary experts for a limited time at the disposal of the Management Committee referred to in Annex I.

3. The Signatories intend to promote inter-laboratory visits.

Section 3

1. This Memorandum of Understanding will take effect for three years upon signature by at least five Signatories.

2. This Memorandum of Understanding may be amended in writing at any time by arrangement between the Signatories.

3. A Signatory which intends, for any reason whatsoever, to terminate its participation in the Project will notify the Secretary-General of the Council of the European Communities of its intention as soon as possible, preferably not later than three months beforehand.

4. If at any time the number of Signatories falls below four, the Management Committee referred to in Annex I will examine the situation which has arisen and will consider whether or not this Memorandum of Understanding should be terminated by decision of the Signatories.

Section 4

1. This Memorandum of Understanding will, for a period of six months from the date of the first signing, remain open for signing by the governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and by the European Communities.

The governments referred to in the first subparagraph and the European Communities may take part in the Project on a provisional basis during the abovementioned period even though they may not have signed this Memorandum of Understanding.

2. After this period of six months has elapsed, applications to sign this Memorandum of Understanding from the governments referred to in paragraph 1 or from the European Communities

will be decided upon by the Management Committee referred to in Annex I, which may attach special conditions thereto.

3. Any Signatory may designate one or more competent public authorities or bodies to act on its behalf, in respect of the implementation of the Project.

Section 5

This Memorandum of Understanding is of an exclusively recommendatory nature. It will not create any binding legal effect in public international law.

Section 6

1. The Secretary-General of the Council of the European Communities will inform all Signatories of the signing dates and of the date of entry into effect of this Memorandum of Understanding and will forward to them all notices which he has received under this Memorandum of Understanding.

2. This Memorandum of Understanding will be deposited with the General Secretariat of the Council of the European Communities. The Secretary-General will forward a certified copy to each of the Signatories.

Done at Brussels on the twenty-first day of April in the year one thousand nine hundred and eighty-three.

ANNEX I

Coordination of the Project

CHAPTER I

1. A Management Committee (hereinafter referred to as 'the Committee' will be set up, composed of not more than two representatives for each Signatory. Each representative may be accompanied by such experts or advisers as he or she may need.

The governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and the European Communities may, in accordance with the second sub-paragraph of Section 4 point 1 of the Memorandum of Understanding, participate in the work of the Committee before becoming Signatories to the Memorandum without, however, having the right to vote.

2. The Committee will be responsible for coordinating the Project and, in particular, for making the necessary arrangements for:

- (a) the choice of research topics on the basis of those provided for in Annex II, including any modification submitted to Signatories by the competent public authorities or bodies; any proposed changes to the Project framework will be referred for an opinion to the Committee of Senior Officials on Scientific and Technical Research (COST);
- (b) examining, selecting and adopting, on the basis of industrial priorities, research proposals made under the Project, while ensuring that each project forms the subject of collaboration between participants from two or more Signatories;
- (c) advising on the direction which work should take;
- (d) drawing up detailed plans and defining methods for the different phases of execution of the Project;
- (e) coordinating the contributions referred to in point 1(c) of Section 2 of the Memorandum of Understanding;
- (f) choosing, in liaison with the Signatories concerned, the experts referred to in Section 2, point 2, of the Memorandum of Understanding, and for giving them instructions;
- (g) keeping abreast of the research being done in the territory of the Signatories and in other countries;
- (h) assuring the necessary coordination with the Community activities in the same field;
- (i) exchanging research results among the Signatories to the extent compatible with adequate safeguards for the interests of Signatories, their competent public authorities or bodies and research contractors in respect of industrial property rights and commercially confidential material;
- (j) promoting and organizing conferences in the field of the Project;
- (k) drawing up the annual interim reports and the final report to be submitted to the Signatories and circulated as appropriate;

- (l) dealing with any problem which may arise out of the execution of the Project, including those relating to possible special conditions to be attached to accession to the Memorandum of Understanding in the case of applications submitted more than six months after the date of the first signing.
3. The Committee will establish its rules of procedure.
4. The Secretariat of the Committee will be provided at the invitation of the Signatories by either the Commission of the European Communities or one of the Signatory States.

CHAPTER II

1. Signatories will invite public research establishments or research contractors in their territories to submit proposals for research work to their respective competent public authorities or bodies. Proposals accepted under this procedure will be submitted to the Committee.
2. Signatories will request public research establishments or research contractors, before the Committee takes any decision on a proposal, to submit to the public authorities or bodies referred to in paragraph 1 notification of previous commitments and industrial property rights which they consider might preclude or hinder the execution of the projects of the Signatories.

CHAPTER III

1. Signatories will require their public research establishments or research contractors to submit periodical progress reports and a final report.
2. Distribution of progress reports will be restricted to the representatives of the Signatories within the Committee. The Signatories will treat these progress reports as confidential and will not use them for purposes other than research work. The final reports on the results obtained will have much wider circulation, covering at least the Signatories public research establishments or research contractors concerned.

CHAPTER IV

1. In order to facilitate the exchange of results referred to in Chapter I, paragraph 2 (i), and subject to national law, Signatories intend to ensure, through the inclusion of appropriate terms in research contracts, that the owners of industrial property rights and technical information resulting from work carried out in implementation of that part of the Project assigned to them under Annex II (hereinafter referred to as 'the research results') will be under an obligation, if so requested by another Signatory (hereinafter referred to as 'the applicant Signatory'), to supply the research results and to grant to the applicant Signatory or to a third party nominated by the applicant Signatory a licence to use the research results and such technical know-how incorporated therein as is necessary for such use if the applicant Signatory requires the granting of a licence for the execution of work in respect of the Project.

Such licences will be granted on fair and reasonable terms, having regard to commercial usage.

2. Signatories will, by including appropriate clauses in contracts placed with research contractors, provide for the licence referred to in paragraph 1 to be extended on fair and reasonable terms, having regard to commercial usage, to previous industrial property rights and to prior technical know-how acquired by the research contractor insofar as the research results could not otherwise be used for the purpose referred to in paragraph 1.

Where a research contractor is unable or unwilling to agree to such extension, the Signatory will submit the case to the Committee before the contract is concluded; hereafter, the Committee will state its position on the case, if possible after having consulted the interested parties.

3. Signatories will take any steps necessary to ensure that the fulfilment of the conditions laid down in this Chapter will not be affected by any subsequent transfer of rights to ownership of the research results. Any such transfer will be notified to the Committee.

4. If a Signatory terminates its participation in the Project, any rights of use which it has granted, or is obliged to grant, to, or has obtained from, other Signatories in application of the Memorandum of Understanding and concerning work carried out up to the date on which the said Signatory terminates its participation will continue thereafter.

5. The provisions of paragraphs 1 to 4 will continue to apply after the period of operation of the Memorandum of Understanding has expired and will apply to industrial property rights as long as these remain valid and to unprotected inventions and technical know-how until such time as they pass into the public domain other than through disclosure by the licensee.

ANNEX II

General description of the Project

A. Introduction

The powder metallurgy industry is seen as an area of significant future expansion. Consequently it is important that European industry has the technical capability to meet the demands of the market. Past experience shows that to some extent the lead time between development and industrial application can be relatively short so that with appropriate support for development activities rapid technological progress could be possible.

The production of components and preforms for engineering applications by powder metallurgical techniques offers several advantages compared with conventional methods. The processing methods used allow considerable savings in raw materials and in energy consumption and the costs of machining to finished size can be substantially reduced. These savings in production costs are likely to become more significant in the medium term as raw materials and energy prices rise and especially in the case of strategic elements which may become restricted in supply.

In addition, parts produced by powder metallurgy can have important technical advantages in terms of improved properties. These benefits arise because of the homogeneous type of microstructure produced using certain techniques which result in components with improved mechanical properties and therefore better performance in service.

Components produced by powder metallurgical processes are currently used in many applications including automobiles, domestic appliances and the electrical industry and in specialized areas such as tool steels and gas turbine components. New and wider applications of powder processes will require new types of powder and improved compaction and sintering techniques. A particularly attractive development is the use of powder techniques to produce components and preforms in 'tailor-made' alloys for specific applications, possibly also in complex shapes, which would be difficult and expensive to produce by alternative methods.

Research in this field is amply justified by the need to maintain or improve technical knowledge in Europe in the face of external competition and to protect employment in the industry in Europe by promoting 'high technology' products and by encouraging the use of improved production methods.

In addition, the experience acquired in the past, especially under COST 50, demonstrated the merit of industrially-orientated projects as compared with pure research, so that the projects proposed have been conceived in a way which relates them as directly as possible with a field of particular interest to the industry.

The programme also takes account of research on recycling and non-destructive tests.

Considerable interest has been shown by industry, and the participation of the representatives of producers of materials, manufacturers of structural elements and users is anticipated.

B. Objectives

The basic considerations in the description of the project have been:

- (a) to provide opportunities for cooperation between the industrial and research organizations in Europe (of which there are more than 100 engaged in powder metallurgical processing, technical development and research work);
- (b) to support and coordinate these activities to improve the competitive position of the industry;
- (c) to provide collaborative research on a wide range of topics of particular relevance to the industry.

C. Technical areas for research projects

The programme covers ferrous and non-ferrous alloys, excluding materials likely to be employed in gas turbines, which are the subject of other COST programmes.

1. Preparation and characterization of metal powders:
 - (a) special production techniques, e.g., rapid solidification (RST);
 - (b) the use of recycled secondary raw materials (e.g. Swarf).
2. Powder compaction:
 - (a) new consolidation processes for increased productivity, e.g. injection moulding;
 - (b) evaluation of HIP for densification and improved properties of materials with special magnetic, electrical and/or mechanical properties.
3. Sintering:
 - (a) Energy efficient methods, e.g. activated sintering, sintering with transient liquid phases in the production of steel and high-speed steel parts;
 - (b) Evaluation of joining techniques — e.g. diffusion bonding, especially for multi-component parts.
4. Spray casting of steels with hot compacting especially for cutting tools.
5. Quality control:
 - (a) Evaluation of quality control methods;
 - (b) Effects of impurities;
 - (c) Influence of microstructure and processing history on properties;
 - (d) Development of test methods.
6. Development of guidelines for the design of powder metallurgical parts:
 - (a) Advantages, limitations;
 - (b) Economic considerations.
7. Improvement in product performance:
 - (a) Optimizing heat treatments;
 - (b) Thermomechanical processing;
 - (c) Application of advanced processing techniques.

**Memorandum of Understanding
for the implementation of a European research project
on powder metallurgy
(COST Project 503)**

Date of entry into force: 21.4.1983

Duration: 20.4.1986

Contracting Parties	Date of signing	Date of entry into force
EC	7. 6.1983	7. 6.1983
Belgium	5.10.1983	5.10.1983
Denmark	21. 4.1983	21. 4.1983
Germany (FR of)	21. 4.1983	21. 4.1983
France	21. 4.1983	21. 4.1983
Luxembourg	20.10.1983	20.10.1983
United Kingdom	21. 4.1983	21. 4.1983
Austria	26. 3.1984	26. 3.1984
Switzerland	2. 8.1983	2. 8.1983
Finland	11. 1.1984	11. 1.1984
Sweden	21. 4.1983	21. 4.1983

Agreement
between the European Economic Community and
the Swiss Confederation
extending and amending the agreement
on a concerted action project in the field of
registration of congenital abnormalities
(medical and public health research) ¹
(Medical research I)

¹ OJ L 126, 13.5.1983.

Agreement
between the European Economic Community and
the Swiss Confederation
extending and amending the agreement
on a concerted action project in the field of
registration of congenital abnormalities
(medical and public health research)
(Medical research I)

THE EUROPEAN ECONOMIC COMMUNITY,

and

THE SWISS CONFEDERATION,

hereinafter referred to as 'the Contracting Parties',

WHEREAS on 1 August 1980 the Swiss Confederation acceded to the Agreement on a concerted action project in the field of registration of congenital abnormalities (medical and public health research), hereinafter referred to as 'the Agreement', signed by the European Economic Community and the Hellenic Republic on 14 December 1979;

WHEREAS the Agreement expired on 31 December 1981;

WHEREAS, by its Decision of 17 August 1982, the Council of the European Communities adopted a sectoral research and development programme in the field of medical and public health research — concerted action (1982 to 1986), which includes the continuation of the project relating to registration of congenital abnormalities;

WHEREAS it is in the common interest of the Contracting Parties to continue the research covered by the Agreement;

WHEREAS the renewal of the Agreement necessitates supplementary contributions from the Contracting Parties,

HAVE AGREED AS FOLLOWS:

Article 1

The Agreement shall be renewed for the period 1 January 1982 to 31 December 1986.

Article 2

The Agreement is hereby amended as follows:

1. Article 3 shall be replaced by the following:

'Article 3

In order to facilitate the execution of the Project, the General Concerted Action Committee and the relevant Concerted Action Committee set up by the decision of the Council of the European Communities of 17 August 1982 shall be enlarged to include the Swiss Confederation for the purposes of all activities arising from the concerted action project covered by this Agreement.

The terms of reference of these enlarged Committees are set out in Annex B.

The secretarial services for the enlarged Committees shall be provided by the Commission.';

2. Article 5 is hereby amended as follows:

- (a) the word 'Committee' in paragraph 1 shall be replaced by 'enlarged General Committee';

- (b) paragraph 2 shall be deleted;

- (c) paragraph 3 shall be replaced by the following:

'2. On completion of the Project, the Commission, in agreement with the enlarged General Committee, shall send to the States a consolidated report on the implementation and results of the project, particularly so that the results obtained may be accessible as rapidly as possible to the enterprises, institutions and other parties concerned, especially in the social areas.';

3. the following text shall be added to Annex A:

'2 bis. Improvement of intra-uterine diagnosis and studies on early foetal loss, death in early childhood and foetal growth disturbances.';

4. Annex B shall be replaced by Annex I to this Agreement.

5. Annex C shall be amended as follows:

- (a) point III shall be replaced by the following:

'III. The funds paid by the Swiss Confederation shall be credited to the concerted action project as budget receipts allocated to a chapter in the statement of revenue of the budget of the European Communities (Commission section).';

- (b) the provisional timetable annexed shall be replaced by Annex II to this Agreement.

Article 3

The estimated financial contribution from the Contracting Parties to the coordination costs for the period 1 January 1982 to 31 December 1986 shall be:

- (i) 600 000 ECU from the European Economic Community,

- (ii) 55 000 ECU from the Swiss Confederation.

The ECU is defined in the Financial Regulation applicable to the general budget of the European Communities and in the financial provisions adopted pursuant to that Regulation.

Article 4

The Project shall be evaluated before the end of the third year. In the light of this evaluation the Commission of the European Communities may, after consulting the enlarged General Committee, submit a proposal for revision of the Project in accordance with the appropriate procedures.

Article 5

1. This Agreement shall enter into force on 1 January 1982.

2. It shall apply, on the one hand, to the territories in which the Treaty establishing the European Economic Community is applied, under the conditions laid down in that Treaty and, on the other hand, to the territory of the Swiss Confederation.

Article 6

This Agreement, drawn up in a single original in the Danish, Dutch, English, French, German, Greek and Italian languages, each text being

equally authentic, shall be deposited in the archives of the General Secretariat of the Council of the European Communities, which shall transmit a certified copy to each of the Contracting Parties.

Done at Brussels on the third day of May in the year one thousand nine hundred and eighty-three.

Council Decision
of 18 April 1983
on the conclusion of the Agreement between the European Economic
Community and the Swiss Confederation extending and amending the
Agreement on a concerted action project in
the field of registration of congenital abnormalities
(medical and public health research)
(83/225/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

HAVING regard to the Treaty establishing the European Economic Community,

HAVING regard to Council Decision 82/616/EEC of 17 August 1982 adopting a sectoral research and development programme of the European Economic Community in the field of medical and public health research — concerted action — (1982 to 1986) ¹, and in particular Article 7 (1) thereof,

HAVING regard to Council Decision 79/696/EEC of 24 July 1979 on the conclusion of the Agreement between the European Economic Community and the Hellenic Republic on a concerted action project in the field of registration of congenital abnormalities (medical and public health research) ²,

HAVING regard to the draft Decision submitted by the Commission,

WHEREAS on 1 August 1980 the Swiss Confederation acceded to the aforementioned Agreement; whereas that Agreement was extended until 31 December 1981 ³;

WHEREAS, in accordance with Article 7 (2) of Decision 82/616/EEC, the Commission has negotiated an Agreement with the Swiss Confederation extending and amending the said Agreement; whereas it is necessary to approve that negotiated Agreement,

HAS DECIDED AS FOLLOWS:

Article 1

The Agreement between the European Economic Community and the Swiss Confederation extending and amending the Agreement on a concerted action project in the field of registration of congenital abnormalities (medical and public health research) is hereby approved on behalf of the Community.

The text of the Agreement is attached to this Decision.

Article 2

The President of the Council is hereby authorized to designate the persons empowered to sign the Agreement in order to bind the Community.

Done at Luxembourg, 18 April 1983.

For the Council

The President

I. Kiechle

¹ OJ L 248, 24.8.1982.

² OJ L 205, 13.8.1979.

³ OJ L 113, 25.4.1981.

ANNEX I

'Annex b

Terms of reference of the enlarged Committees

I. Enlarged General Concerted Action Committee

1. The General Committee shall:

- (a) contribute to the best possible implementation of the programme by giving its opinion on all its aspects;
- (b) endeavour to integrate those parts of national research activities covered by the Agreement into a process of coordination between the Contracting Parties;
- (c) coordinate, within the programme as defined in Annex A to the Agreement, the activities, duration and, possibly, early termination of the projects forming the research areas of this programme, according to emerging needs or results of periodical evaluations;
- (d) indicate guidelines for the enlarged Concerted Action Committee;
- (e) advise the Commission on allocation of funds for coordination purposes, supporting centralized facilities, meeting urgent needs in critical areas, and undertaking exploratory activities with a view to the preparation of future programmes.

2. The reports and opinions of the enlarged General Committee shall be forwarded to the Contracting Parties. The Commission shall forward these opinions to the Committee for Scientific and Technical Research (CREST).

II. Enlarged Concerted Action Committee

1. The Committee shall:

- (a) assist the enlarged General Committee in its management tasks by ensuring the scientific and technical execution of all those projects allocated to it in accordance with its competence;
- (b) evaluate the results and draw conclusions as regards their application;
- (c) be responsible for the exchange of information referred to in the first paragraph of Article 5;
- (d) keep abreast of national research being done in the field of the projects and, more especially, of scientific and technical developments likely to affect their execution;
- (e) suggest guidelines to the project leaders.

2. The Committee's reports and opinions shall be forwarded to the enlarged General Committee and to the Commission.

3. The project leaders shall attend the meetings of the Committee but shall not have the right to vote.'

ANNEX II
Provisional timetable
for the coordination costs relating to the concerted action project in the field
of registration of congenital abnormalities

Budget item 7367 'Medical research'

Project: I.1.4.

(in ECU)

	1982		1983 to 1986		Total	
	Commitments	Payments	Annual Commitments	Annual Payments	Commitments	Payments
I. Initial estimate of overall requirements						
(a) Staff	—	—	—	—	—	—
(b) Administrative operating expenditure	20 000	20 000	20 000	20 000	100 000	100 000
(c) Contracts	100 000	100 000	100 000	100 000	500 000	500 000
Total (to be covered by appropriations entered under item 7367)	120 000	120 000	120 000	120 000	600 000	600 000
II. Revised estimate of expenditure taking into account additional requirements arising from the accession of the Swiss Confederation:						
(a) Staff	—	—	—	—	—	—
(b) Administrative operating expenditure	20 000 + 5 000	20 000 + 5 000	20 000 + 5 000	20 000 + 5 000	100 000 + 25 000	100 000 + 25 000
(c) Contracts	100 000 + 6 000	100 000 + 6 000	100 000 + 6 000	100 000 + 6 000	500 000 + 30 000	500 000 + 30 000
New total	120 000 + 11 000	120 000 + 11 000	120 000 + 11 000	120 000 + 11 000	600 000 + 55 000	600 000 + 55 000
III. Difference between I. and II. to be covered by contributions from the Swiss Confederation	11 000	11 000	11 000	11 000	55 000	55 000
IV. Total expenditure 1979-1981	—	—	—	—	352 000	352 000

**Agreement
between the European Economic Community and
the Swiss Confederation
extending and amending the Agreement
on a concerted action project in the field of
registration of congenital abnormalities
(medical and public health research)
(Medical research I)**

Decision of Community programmes: 17.8.1982

Date of entry into force: 1.1.1982

Duration: 31.12.1986

Contracting Parties	Date of signing	Date of entry into force
EC	3.5.1983	3.5.1983
Switzerland	3.5.1983	3.5.1983

**Agreement
between the European Economic Community
and the Swiss Confederation
on a concerted action project
in the field of cellular ageing ¹**
(Medical research III)

¹ OJ L 126, 13.5.1983.

**Agreement
between the European Economic Community
and the Swiss Confederation
on a concerted action project
in the field of cellular ageing**

(Medical research III)

THE EUROPEAN ECONOMIC COMMUNITY, hereinafter referred to as 'the Community'

and

THE SWISS CONFEDERATION,

WHEREAS a European concerted action research project in the field of cellular ageing is likely to contribute effectively to the attainment of an optimum level of individual and public health;

WHEREAS, by its Decision of 17 August 1972, the Council of the European Communities adopted a sectoral research and development programme in the field of medical and public health research — concerted action (1982-1986) which includes a concerted action project in the field of cellular ageing;

WHEREAS the Member States of the Community and the Swiss Confederation, hereinafter referred to as 'the States', intend, pursuant to the rules and procedures applicable to their national programmes, to carry out all or part of the research described in Annex A and are prepared to integrate such research within a framework of coordination which they consider will be of mutual benefit;

WHEREAS the estimated cost of the research described in Annex A to be conducted by the States amounts to 25 million ECU,

HAVE AGREED AS FOLLOWS:

Article 1

The Community and the Swiss Confederation, hereinafter referred to as 'the Contracting Parties', shall participate for a period from 1 January 1983 to 31 December 1986 in a concerted action project in the field of cellular ageing.

This project shall consist in the coordination of the Community's concerted action programme with that of the Swiss Confederation.

The research covered by this Agreement is described in Annex A.

The States shall remain entirely responsible for the research conducted by their national institutes or bodies.

Article 2

The Commission of the European Communities, hereinafter referred to as 'the Commission', shall be responsible for the coordination activities.

It shall be assisted in the execution of this task by a project leader.

Article 3

In order to facilitate the implementation of the Project, the General Concerted Action Committee and the relevant Concerted Action Committee set up by the Decision of the Council of the European Communities of 17 August 1982 shall be enlarged to include the Swiss Confederation for the purpose of all activities arising from the concerted action project covered by this Agreement.

The terms of reference of these enlarged Committees are defined in Annex B.

The secretarial services for these enlarged Committees shall be provided by the Commission.

Article 4

The estimated financial contribution of the Contracting Parties to the coordination costs for the period referred to in Article 1 shall be:

- (a) 600 000 ECU from the Community,
- (b) 56 000 ECU from the Swiss Confederation.

The ECU is defined in the Financial Regulation applicable to the general budget of the European Communities and in the financial provisions adopted pursuant to that Regulation.

The rules governing the financing of the Agreement are set out in Annex C.

Article 5

The Project shall be evaluated at the end of the third year.

As a result of this evaluation the Commission may, after consulting the enlarged General Committee, submit a proposal for revision of the Project in accordance with the appropriate procedures.

Article 6

The States and the Commission shall periodically exchange all relevant information concerning the execution of the research covered by this Agreement. The States shall provide the Commission with all the information necessary for coordination purposes. They shall also endeavour to provide the Commission with information on similar research planned or carried out by bodies which are not under their authority. Any information

will be treated as confidential if the State which supplies it so requests.

On completion of the programme, the Commission, in agreement with the enlarged General Committee, shall send to the States a consolidated report on the implementation and results of the programme, particularly so that the results obtained may be accessible as rapidly as possible to the enterprises, institutions and other parties concerned, especially in the social area.

Article 7

1. This Agreement shall enter into force on the day of its signature.

2. For a period of 12 months following its entry into force, this Agreement shall be open for accession by other European States which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971. The instruments of accession shall be deposited with the General Secretariat of the Council of the European Communities.

A State which accedes to this Agreement shall become a Contracting Party within the meaning of Article 1 on the date on which the instrument of accession is deposited, and the references to 'the Swiss Confederation' which appear in this Agreement shall be construed as references to the acceding State also. Each acceding State shall contribute to the coordination costs under the conditions set out in Article 4 in reference to the Swiss Confederation.

3. The Secretary-General of the Council of the European Communities shall inform each of the Contracting Parties of the depositing of the instruments of accession referred to in paragraph 2.

Article 8

This Agreement shall apply, on the one hand, to the territories in which the Treaty establishing the European Economic Community is applied, under the conditions laid down in that Treaty, and, on the other hand, to the territory of the Swiss Confederation.

Article 9

This Agreement, drawn up in a single original in the Danish, Dutch, English, French, German, Greek and Italian languages, each text being equally authentic, shall be deposited in the archives of the General Secretariat of the Council of the European Communities, which shall transmit a certified copy to each of the Contracting Parties.

Done at Brussels on the fourth day of May in the year one thousand nine hundred and eighty-three.

Council Decision
of 18 April 1983
on the conclusion of the Agreement between the European Economic
Community and the Swiss Confederation on a concerted action project
in the field of cellular ageing
(83/224/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

HAVING regard to the Treaty establishing the European Economic Community,

HAVING regard to Council Decision 82/616/EEC of 17 August 1982 adopting a sectoral research and development programme of the European Economic Community in the field of medical and public health research — concerted action — (1982 to 1986)¹, and in particular Article 7 (1) thereof,

HAVING regard to the draft Decision submitted by the Commission,

WHEREAS, pursuant to Article 7 (2) of Decision 82/616/EEC, the Commission has negotiated an Agreement with the Swiss Confederation with a view to associating it partly with this programme; whereas it is necessary to approve that Agreement,

HAS DECIDED AS FOLLOWS:

Article 1

The Agreement concluded between the European Economic Community and the Swiss Confederation on a concerted action project in the field of cellular ageing is hereby approved on behalf of the Community.

The text of the Agreement is attached to this Decision.

Article 2

The President of the Council is hereby authorized to designate the persons empowered to sign the Agreement in order to bind the Community.

Done at Luxembourg, 18 April 1983.

For the Council

The President

I. Kiechle

¹ OJ L 248, 24.8.1982.

ANNEX A

Research covered by the Agreement

1. Cellular basis of liver- and brain-ageing: biophysical and biochemical studies at the organic, cellular and sub-cellular level of progressive age-related functional alterations, including studies of senile dementia.
2. The immune system during ageing: study of age-induced changes in the immune system in animals and, to a lesser extent, in man, with particular emphasis on immunodeficiencies, possible forms of therapy and the origin of arthritic diseases.
3. Ageing of the crystalline lens: physiological, morphological and biochemical studies of age-related functional deterioration leading to senile cataracts in human and animal tissue.

ANNEX B

Terms of reference of the enlarged Committees

I. The enlarged General Concerted Action Committee

1. The General Committee shall:

- (a) contribute to the best possible implementation of the programme by giving its opinion on all its aspects;
- (b) endeavour to integrate those parts of national research activities covered by the Agreement into a process of coordination between the Contracting Parties;
- (c) within the programme as defined in Annex A to the Agreement, coordinate the activities, duration, and possibly, early termination of the projects forming the research areas of this programme, according to emerging needs or the results of periodical evaluations;
- (d) indicate guidelines to the enlarged Concerted Action Committee;
- (e) advise the Commission on allocation of funds for coordination purposes, supporting centralized facilities, meeting urgent needs in critical areas, and undertaking exploratory activities in view of the preparation of future programmes.

2. The reports and opinions of the enlarged General Committee shall be forwarded to the Contracting Parties. The Commission shall forward these opinions to the Committee for Scientific and Technical Research (CREST).

II. Enlarged Concerted Action Committee

1. The Committee shall:

- (a) assist the enlarged General Committee in its management tasks by ensuring the scientific and technical execution of all those projects assigned to it in accordance with its competence;
- (b) evaluate the results and draw conclusions as regards their application;
- (c) be responsible for the exchange of information referred to in the first paragraph of Article 6;
- (d) keep abreast of national research being done in the field of the projects and, more especially, of scientific and technical developments likely to affect their execution;
- (e) suggest guidelines to the project leader.

2. The Committee's reports and opinions shall be forwarded to the enlarged General Committee and to the Commission.

3. The project leader shall attend the meetings of the Committee but shall not have the right to vote.

ANNEX C

Financing Rules

Article 1

This Annex lays down the financial rules referred to in Article 4 of the Agreement on a concerted action project in the field of cellular ageing.

Article 2

At the beginning of each financial year, the Commission shall send to the Swiss Confederation a call for funds corresponding to its share of the annual coordination costs under the Agreement, calculated in proportion to the maximum amounts laid down in Article 4 of the Agreement.

This contribution shall be expressed both in ECU and in the currency of the Swiss Confederation, the value of the ECU being defined in the Financial Regulation applicable to the general budget of the European Communities and determined on the date of the call for funds.

The total contributions shall cover the travel and subsistence costs of the delegates to the Committee, in addition to the coordination costs proper.

The Swiss Confederation shall pay its annual contribution to the coordination costs under the Agreement at the beginning of each year, and by 31 March at the latest. Any delay in the payment of the annual contribution shall give rise to the payment of interest by the Swiss Confederation at a rate equal to the highest discount rate obtaining in the States on the due date. The rate shall be increased by 0.25 of a percentage point for each month of delay. The increased rate shall be applied to the entire period of delay. However, such interest shall be chargeable only if payment is effected more than three months after the issue of a call for funds by the Commission.

Article 3

The funds paid by the Swiss Confederation shall be credited to the concerted action project as budget receipts allocated to a heading in the statement of the revenue of the general budget of the European Communities (Commission section).

Article 4

The provisional timetable for the coordination costs referred to in Article 4 of the Agreement is annexed.

Article 5

The Financial Regulation applicable to the general budget of the European Communities shall apply to the management of the appropriations.

Article 6

At the end of each financial year, a statement of appropriations for the concerted action project shall be prepared and transmitted to the Swiss Confederation for information.

**Provisional timetable
for the coordination costs relating to the concerted action project
in the field of cellular ageing**

Budget Item 7367 — Medical Research

Project: I.2.1

(in ECU)

	1983		1984 and 1985		Total	
	CA	PA	CA	PA	CA	PA
I Initial estimate of overall requirements:						
(a) Staff	—	—	—	—	—	—
(b) Administrative operating expenditure	50 000	50 000	50 000	50 000	200 000	200 000
(c) Contracts	100 000	100 000	100 000	100 000	400 000	400 000
TOTAL (to be covered by appropriations entered under Item 7367)	150 000	150 000	150 000	150 000	600 000	600 000
II. Revised estimate of expenditure taking into account additional requirements arising from the accession of the Swiss Confederation.						
(a) Staff	—	—	—	—	—	—
(b) Administrative operating expenditure	50 000 + 5 000	50 000 + 5 000	50 000 + 5 000	50 000 + 5 000	200 000 + 20 000	200 000 + 20 000
(c) Contracts	100 000 + 9 000	100 000 + 9 000	100 000 + 9 000	100 000 + 9 000	400 000 + 36 000	400 000 + 36 000
NEW TOTAL	150 000 + 14 000	150 000 + 14 000	150 000 + 14 000	150 000 + 14 000	600 000 + 56 000	600 000 + 56 000
III. Difference between I and II to be covered by the contribution from the Swiss Confederation.	14 000	14 000	14 000	14 000	56 000	56 000

CA = Appropriation for credits
PA = Appropriation for commitments

**Agreement
between the European Economic Community
and the Swiss Confederation
on a concerted action project
in the field of cellular ageing
(Medical research III)**

Decision of Community programmes: 17.8.1982

Date of entry into force: 4.5.1983

Duration: 31.12.1986

Contracting Parties	Date of signing	Date of entry into force
EC	4.5.1983	4.5.1983
Switzerland	4.5.1983	4.5.1983

**Community-COST Concertation Agreement
on a concerted action project on the effect
of processing on the
physical properties of foodstuffs**

(COST Project 90 bis) ¹

¹ OJ L 353, 15.12.1982.

Community-COST Concertation Agreement on a concerted action project on the effect of processing on the physical properties of foodstuffs

(COST Project 90 bis)

THE EUROPEAN ECONOMIC COMMUNITY,

hereinafter referred to as 'the Community',

THE SIGNATORY STATES TO THIS AGREEMENT,

hereinafter referred to as 'the participating non-member States',

WHEREAS a Community-COST Concertation Agreement on a concerted action project on the effects of processing on the physical properties of foodstuffs (COST Project 90) was concluded between the Community and some non-member States involved in European cooperation in the field of scientific and technical research (COST) on 27 March 1980 and expired on 24 February 1981;

WHEREAS the abovementioned concerted action project has produced very encouraging results;

WHEREAS by its Decision of 22 November 1982 the Council of the European Communities adopted a second Community concerted action project on the effect of processing on the physical properties of foodstuffs;

WHEREAS the Member States of the Community and the participating non-member States, hereinafter referred to as 'the States', intend, subject to the rules and procedures applicable to their national programmes, to carry out the research described in Annex A and are prepared to integrate such research into a process of concertation which they consider will be of mutual benefit;

WHEREAS the implementation of the research covered by the concerted action project will require a financial contribution of approximately 20 million ECU from the States,

HAVE AGREED AS FOLLOWS:

Article 1

The Community and the participating non-member States, hereinafter referred to as 'the Contracting Parties', shall participate for a period extending until 15 December 1986 in a concerted action project on the effect of processing on physical properties of foodstuffs.

This project shall consist in concertation between the Community concerted action programme and the corresponding programmes of the participating non-member States. Research topics covered by this Agreement are listed in Annex A.

The States shall remain entirely responsible for the research carried out by their national institutions or bodies.

Article 2

Concertation between the Contracting Parties shall be effected through a Community-COST Concertation Committee, hereinafter referred to as 'the Committee'.

The Committee shall draw up its rules of procedure. Its Secretariat will be provided by the Commission of the European Communities, hereinafter referred to as 'the Commission'.

The terms of reference and the composition of this Committee are defined in Annex B.

Article 3

In order to ensure optimum efficiency in the execution of this concerted action project, a leader shall be appointed by the Commission in agreement with the delegates of the participating non-member States on the Committee.

Article 4

The maximum financial contribution by the Contracting Parties to the coordination costs for the period referred to in the first paragraph of Article 1 shall be:

- 670 000 ECU from the Community,
- 67 000 ECU from each participating non-member State.

The ECU is that defined by the Financial Regulation in force applicable to the general budget of the European Communities and by the financial arrangements adopted pursuant thereto.

The rules governing the financing of the Agreement are set out in Annex C.

Article 5

1. Through the Committee, the States shall exchange regularly all useful information resulting from the execution of the research covered by the concerted action project. They shall also endeavour to provide information on similar research planned or carried out by other bodies. Any information shall be treated as confidential if the State which provides it so requests.

2. In agreement with the Committee, the Commission shall prepare annual progress reports on the basis of the information supplied and shall forward them to the States.

3. At the end of the concertation period, the Commission shall, in agreement with the Committee, forward to the States a general report on the execution and results of the project. This report shall be published by the Commission not later than six months after it has been forwarded, unless a State objects. In that case the report shall be treated as confidential and shall be forwarded, on request and with the agreement of the Committee, solely to the institutions and undertakings whose research or production activities justify access to knowledge resulting from the performance of the research covered by the concerted action project.

Article 6

1. This Agreement shall be open for signature by the Community and by the non-member States which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971.

2. As a condition precedent to its participation in the concerted action project defined in Article 1, each of the Contracting Parties shall, after signing this Agreement, have notified the Secretary-General of the Council of the European Communities not later than 15 June 1983 of the completion of the procedures necessary under its internal provisions for the implementation of this Agreement.

3. For the Contracting Parties which transmit the notification provided for in paragraph 2, this Agreement shall come into force on the first day of the month following that in which the Community and at least one of the participating non-member States transmitted these notifications.

For those Contracting Parties which transmit the notification after the entry into force of this Agreement, it shall come into force on the first day of the second month following the month in which the notification was transmitted.

Contracting Parties which have not transmitted this notification when this Agreement comes into force shall be able to take part in the work of the Committee without voting rights until 15 June 1983.

4. The Secretary-General of the Council of the European Communities shall inform each of the Contracting Parties of the notifications provided for in paragraph 2 and of the date of entry into force of this Agreement.

Article 7

This Agreement shall apply, on the one hand, to the territories in which the Treaty establishing the European Economic Community is applied and under the conditions laid down in that Treaty and, on the other hand, to the territories of the participating non-member States.

Article 8

This Agreement, drawn up in a single original in the Danish, Dutch, English, French, German, Greek and Italian languages, each text being equally authentic, shall be deposited in the archives of the General Secretariat of the Council of the European Communities which shall transmit a certified copy to each of the Contracting Parties.

Council Decision
of 22 November 1982 concerning the conclusion of a Community-COST
Concertation Agreement
on a concerted action project on the effect of
processing on the physical properties of foodstuffs
(COST Project 90 bis)
(82/840/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

HAVING regard to the Treaty establishing the European Economic Community,

HAVING regard to Council Decision 82/839/EEC of 22 November 1982 adopting a concerted action project of the European Economic Community on the effect of processing on the physical properties of foodstuffs and in particular Article 6 thereof,

HAVING regard to the Council Decision of 15 February 1982 authorizing the Commission to negotiate an agreement between the Community and the non-member States participating in the European cooperation in the field of scientific and technical research (COST) for the implementation of a concerted action project on the effect of processing on the physical properties of foodstuffs,

HAVING regard to the draft Decision submitted by the Commission,

WHEREAS the Commission has completed these negotiations;

WHEREAS this Agreement should be approved,

HAS DECIDED AS FOLLOWS:

Article 1

The Community-COST Concertation Agreement on a concerted action project on the effect of processing on the physical properties of foodstuffs (COST Project 90 bis) is hereby approved on behalf of the Community.

The text of the Agreement is attached to this Decision.

Article 2

The President of the Council is hereby authorized to designate the persons empowered to sign the Agreement in order to bind the Community.

Done at Brussels, 22 November 1982.

For the Council

The President

U. Ellemann-Jensen

ANNEX A

Research topics covered by the Agreement

1. Mechanical properties:¹

- (a) integral solids, e. g. density, porosity, stress, strain, fracture;
- (b) particulates, e. g. powders, agglomerates.

2. Diffusional properties:¹

- (a) diffusion of water and water vapour;
- (b) diffusion of solutes, e. g. salt, sugars;
- (c) diffusion of volatiles, e. g. aromas.

3. Electrical and optical properties:¹

- (a) dielectric properties;
- (b) visible, ultraviolet and infra-red.

4. Continuation of the collection of data (on rheology, sorption and thermal properties).

5. Conclusion of research related to rheology, sorption and thermal properties.

¹ Related to the intention to define general standard methodology taking into account the possible influence of the different parameters.

ANNEX B

Terms of reference and composition of the Community-COST Concertation Committee on the effect of processing on the physical properties of foodstuffs

1. The Committee shall:

- 1.1. contribute to the optimum execution of the project by giving its opinion on all aspects of its progress;
- 1.2. evaluate the results of the project and draw conclusions regarding their application;
- 1.3. be responsible for the exchange of information provided for in Article 5 (1) of the Agreement;
- 1.4. suggest guidelines to the project leader;
- 1.5. have the right to set up, in respect of each of the research topics defined in Annex A, a subcommittee to ensure that the programme is properly implemented.

2. The Committee's reports and the opinions shall be communicated to the States.

3. The Committee shall be composed of one delegate from the Commission, as coordinator of the Community concerted action project, one delegate from each participating non-member State, one delegate from each Member State representing its national programme and the project leader. Each delegate may be accompanied by experts.

ANNEX C

Financing Rules

Article 1

These provisions lay down the financial rules referred to in Article 4 of the Community-COST Concertation Agreement on a concerted action project on the effect of processing on the physical properties of foodstuffs (COST project 90 bis).

Article 2

At the beginning of each financial year, the Commission shall send to each of the participating non-member States a call for funds corresponding to its share of the annual coordination costs under the Agreement, calculated in proportion to the maximum amounts laid down in Article 4 of the Agreement.

This contribution shall be expressed both in ECU and the currency of the participating non-member State concerned, the value of the ECU being defined in the Financial Regulation, applicable to the general budget of the European Communities and determined on the date of the call for funds.

The total contributions shall cover the travel and subsistence costs of the delegates to the Committee, in addition to the coordination costs proper.

Each participating non-member State shall pay its annual contribution to the coordination costs under the Agreement at the beginning of each year, and by 31 March at the latest. Any delay in the payment of the annual contribution shall give rise to the payment of interest by the participating non-member State concerned at a rate equal to the highest discount rate ruling in the States on the due date. The rate shall be increased by 0.25 of a percentage point for each month of delay. The increased rate shall be applied to the entire period of delay. However, such interest shall be chargeable only if payment is effected more than three months after the issue of a call for funds by the Commission.

Article 3

The funds paid by participating non-member States shall be credited to the concerted action project as budget receipts allocated to a heading in the statement of the revenue of the budget of the European Communities (Commission section).

Article 4

The provisional timetable for the coordination costs referred to in Article 4 of the Agreement is annexed.

Article 5

The Financial Regulation in force applicable to the general budget of the European Communities shall apply to the management of the appropriations.

Article 6

At the end of each financial year, a statement of appropriations for the concerted action project shall be prepared and transmitted to the participating non-member States for information.

Done at Brussels on the fourth day of May in the year one thousand nine hundred and eighty-three.

ANNEX 5

Provisional timetable for the concerted action project
 'Effect of processing on the physical properties of foodstuffs'
 (COST Project 90 bis)

(in ECU)

	1982		1983		1984		1985		Total	
	CA	PA	CA	PA	CA	PA	CA	PA	CA	PA
I. Initial estimate of overall requirements										
(a) Staff	46 000	46 000	} 160 000	} 160 000	} 175 000	} 175 000	} 189 000	} 189 000	} 670 000	} 670 000
(b) Administrative operating expenditure	50 000	50 000								
(c) Contracts	50 000	50 000								
Total	146 000	146 000	160 000	160 000	175 000	175 000	189 000	189 000	670 000	670 000
II. Revised estimate of expenditure taking into account additional requirements arising from the accession of participating non-member States.										
(a) Staff	} 146 000 (1 + $\frac{n}{10}$)	} 146 000 (1 + $\frac{n}{10}$)	} 160 000 (1 + $\frac{n}{10}$)	} 160 000 (1 + $\frac{n}{10}$)	} 175 000 (1 + $\frac{n}{10}$)	} 175 000 (1 + $\frac{n}{10}$)	} 189 000 (1 + $\frac{n}{10}$)	} 189 000 (1 + $\frac{n}{10}$)	} 670 000 (1 + $\frac{n}{10}$)	} 670 000 (1 + $\frac{n}{10}$)
(b) Administrative operating expenditure										
(c) Contracts										
III. Difference between I and II to be covered by contributions from participating non-member States	$\frac{n}{10}$ 146 000	$\frac{n}{10}$ 146 000	$\frac{n}{10}$ 160 000	$\frac{n}{10}$ 160 000	$\frac{n}{10}$ 175 000	$\frac{n}{10}$ 175 000	$\frac{n}{10}$ 189 000	$\frac{n}{10}$ 189 000	$\frac{n}{10}$ 670 000	$\frac{n}{10}$ 670 000

n = number of participating non-member States.
 CA = commitment appropriations.
 PA = payment appropriations.

**Community-COST Concertation Agreement
on a concerted action project on the effect of processing on the
physical properties of foodstuffs (COST Project 90 bis)**

Decision of Community programmes: 22.11.1982

Date of entry into force: 1.1.1983

Duration: 15.12.1986

Contracting Parties	Date of signing	Date of entry into force
EC	9.12.1982	1.1.1983
Switzerland	4. 5.1983	1.8.1983
Sweden	9.12.1982	1.1.1983

Memorandum of Understanding
for carrying out a European research project
on *in vitro* cultures for the purification
and propagation of plants

(COST Project 87)

Memorandum of Understanding for carrying out a European research project on *in vitro* cultures for the purification and propagation of plants

(COST Project 87)

The Signatories to this Memorandum of Understanding, declaring their common intention to take part in a European research project on *in vitro* cultures for the purification and propagation of plants, have reached the following understandings:

Section 1

1. The Signatories intend to cooperate in a project to promote research into *in vitro* plant cultures for the purification and propagation of plants (hereinafter referred to as the 'Project').

2. The main objective of the Project is to develop tissue cultures techniques in order to obtain a technological and economical break-through for Europe which would enable it to maintain its position in sensitive areas of agriculture, such as the rapid selection and large-scale reproduction of plant varieties under strictly controlled sanitary conditions.

3. The Signatories hereby declare their intention of carrying out the project jointly, in accordance with the general description given in Annex II, adhering as far as possible to a timetable to be decided by the Management Committee referred to in Annex I.

4. The Project will be carried out through concerted action, in accordance with the provisions of Annex I.

5. The overall value of the activities of the Signatories under the Project is estimated at approximately 1.5 million ECU at 1983 prices.

6. The Signatories will make every effort to ensure that the necessary funds are made available under their internal financing procedures.

Section 2

Signatories intend to take part in the Project in one or several of the following ways:

- (a) by carrying out studies and research in their technical services or public research establishments (hereinafter referred to as 'public research establishments');
- (b) by concluding contracts for studies and research with organizations (hereinafter referred to as 'research contractors');
- (c) by contributing to the provision of a Secretariat and/or other coordinatory services or activities necessary for the aims of the project to be achieved;
- (d) by making information on existing relevant research, including all necessary basic data, available to other Signatories;
- (e) by arranging for inter-laboratory visits and by cooperating in a small-scale exchange of staff in the later stages.

Section 3

1. This Memorandum of Understanding will take effect on its signing by at least six Signatories. It will expire when a Community-COST Concertation Agreement on *in vitro* cultures for the purification and propagation of plants comes into force or, at the latest, after three years.

2. This Memorandum of Understanding may be amended in writing at any time by arrangement between the Signatories.

3. A Signatory which intends, for any reason whatsoever, to terminate its participation in the Project will notify the Secretary-General of the Council of the European Communities of its intention as soon as possible, preferably not later than three months beforehand.

4. If at any time the number of Signatories falls below six, the Management Committee referred to in Annex I will examine the situation which has arisen and will consider whether or not this Memorandum of Understanding should be terminated by decision of the Signatories.

Section 4

1. This Memorandum of Understanding will, for a period of six months from the date of the first signing, remain open for signing by the governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and by the European Communities.

The governments referred to in the first subparagraph and the European Communities may take part in the Project on a provisional basis during the abovementioned period, even though they may not have signed this Memorandum of Understanding.

2. After this period of six months has elapsed, applications to sign this Memorandum of Understanding from the governments referred to in paragraph 1 or from the European Communities will be decided upon by the Management Committee referred to in Annex I, which may attach special conditions thereto.

3. Any Signatory may designate one or more competent public authorities or bodies to act on its behalf in respect of the implementation of the Project.

Section 5

This Memorandum of Understanding is of an exclusively recommendatory nature. It will not create any binding legal effect in public international law.

Section 6

1 The Secretary-General of the Council of the European Communities will inform all Signatories of the signing dates and date of entry into effect of this Memorandum of Understanding and will forward to them all notices which he has received under this Memorandum of Understanding.

2. This Memorandum of Understanding will be deposited with the General Secretariat of the Council of the European Communities. The Secretary-General will forward a certified copy to each of the Signatories.

Done at Brussels on the fifteenth day of June in the year one thousand nine hundred and eighty-three.

ANNEX I

Coordination of the Project

CHAPTER I

1. A Management Committee (hereinafter referred to as 'the Committee') will be set up, composed of not more than two representatives for each Signatory. Each representative may be accompanied by such experts or advisers as he or she may need.

The Committee may establish a subcommittee for each model plant, composed of research workers who are actively engaged in the tissue culture of the model plant concerned.

The governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and the European Communities may, in accordance with the second subparagraph of Section 4 point 1 of the Memorandum of Understanding, participate in the work of the Committee before becoming Signatories to the Memorandum without, however having the right to vote.

When the European Communities are not a Signatory to the Memorandum of Understanding, a representative of the Commission of the European Communities may attend Committee meetings as an observer.

2. The Committee will be responsible for coordinating the Project and in particular for making the necessary arrangements for:

- (a) the choice of research topics on the basis of those provided for in Annex II, including any modifications submitted to Signatories by the competent public authorities or bodies; any proposed changes to the Project framework will be referred for an opinion to the Committee of Senior Officials on Scientific and Technical Research (COST);
- (b) advising on the direction which work should take;
- (c) drawing up detailed plans and defining methods for the different phases of execution of the Project;
- (d) coordinating the contributions referred to in subparagraph (c) of Section 2 of the Memorandum of Understanding;
- (e) keeping abreast of the research being done in the territory of the Signatories and in other countries;
- (f) liaising with the international bodies concerned;
- (g) exchanging research results among the Signatories to the extent compatible with adequate safeguards for the interests of Signatories, their competent public authorities or bodies and research contractors in respect of industrial property rights and commercially confidential material;
- (h) drawing up the annual interim reports and the final report to be submitted to the Signatories and circulated as appropriate;
- (i) dealing with any problem which may arise out of the execution of the Project, including those relating to possible special conditions to be attached to accession to the Memorandum of Understanding in the case of applications submitted more than six months after the date of the first signing.

3. The Committee will establish its rules of procedure.
4. The Secretariat of the Committee will be provided at the invitation of the Signatories by either the Commission of the European Communities or one of the Signatory States.

CHAPTER II

1. Signatories will invite public research establishments or research contractors in their territories to submit proposals for research work to their respective competent public authorities or bodies. Proposals accepted under this procedure will be submitted to the Committee.
2. Signatories will request public research establishments or research contractors, before the Committee takes any decision on a proposal, to submit to the public authorities or bodies referred to in paragraph 1 notification of previous commitments and industrial property rights which they consider might preclude or hinder the execution of the projects of the Signatories.

CHAPTER III

1. Signatories will require their public research establishments or research contractors to submit periodical progress reports and a final report.
2. Distribution of progress reports will be restricted to the representatives of the Signatories within the Committee. The Signatories will treat these progress reports as confidential and will not use them for purposes other than research work. The final reports on the results obtained will have much wider circulation, covering at least the Signatories' public research establishments or research contractors concerned.

CHAPTER IV

1. In order to facilitate the exchange of results referred to in Chapter I, paragraph 2 (g), and subject to national law, Signatories intend to ensure, through the inclusion of appropriate terms in research contracts, that the owners of industrial property rights and technical information resulting from work carried out in implementation of that part of the Project assigned to them under Annex II (hereinafter referred to as 'the research results') will be under an obligation, if so requested by another Signatory (hereinafter referred to as 'the applicant Signatory'), to supply the research results and to grant to the applicant Signatory or to a third party nominated by the applicant Signatory a licence to use the research results and such technical know-how incorporated therein as is necessary for such use if the applicant Signatory requires the granting of a licence for the execution of work in respect of the Project.

Such licences will be granted on fair and reasonable terms, having regard to commercial usage.

2. Signatories will, by including appropriate clauses in contracts placed with research contractors, provide for the licence referred to in paragraph 1 to be extended on fair and reasonable terms, having regard to commercial usage, to previous industrial property rights and to prior technical know-how acquired by the research contractor insofar as the research results could not otherwise be used for the purpose referred to in paragraph 1.

Where a research contractor is unable or unwilling to agree to such extension, the Signatory will submit the case to the Committee, before the contract is concluded; hereafter, the Committee will state its position on the case, if possible after having consulted the interested parties.

3. Signatories will take any steps necessary to ensure that the fulfilment of the conditions laid down in this Chapter will not be affected by any subsequent transfer of rights to ownership of the research results. Any such transfer will be notified to the Committee.

4. If a Signatory terminates its participation in the Project, any rights of use which it has granted, or is obliged to grant, to, or has obtained from, other Signatories in application of the Memorandum of Understanding and concerning work carried out up to the date on which the said Signatory terminates its participation will continue thereafter.

5. The provisions of paragraphs 1 to 4 will continue to apply after the period of operation of the Memorandum of Understanding has expired and will apply to industrial property rights as long as these remain valid, and to unprotected inventions and technical know-how until such time as they pass into the public domain other than through disclosure by the licensee.

ANNEX II

General description of the Project and indicative pattern of potential participation

I. General aims of the project

1. *Aims*

The primary aims of this research consist of developing tissue culture methods for:

- (a) rapid multiplication of healthy plants,
- (b) freeing plants from pathogens,
- (c) safe long-term storage of plant cultures.

2. *Programme*

Tissue culture techniques are being widely applied with many contradictory results. For the research programme, plants which have a high degree of interest and which represent different sectors of the industry are selected as model plants. This work on the model plants will lead to answers to the many technical problems with *in vitro* culture.

The model plants selected are:

- (a) Apple rootstock M 26,
- (b) Cordyline
- (c) Nephrolepis,
- (d) Gerbera,
- (e) Pelargonium,
- (f) Saintpaulia.

A detailed scheme covering laboratory methods for purification and propagation of each of these was prepared by one expert. The research programme should consist of participating laboratories following the agreed scheme through purification, propagation and storage studies for the model plants that interest them, and comparing results achieved with their other methods. When results from many laboratories are correlated, a full picture of the problems and advantages of tissue culture will become apparent. This will lead to the development of solutions of such problems as the early detection of pathogens and of variants. The resulting improvements in methodology will be applicable to a wide range of plants.

3. *Implementation and timing*

The early stages of the implementation of the programme will require the drawing up of a list of research workers

- (i) actively engaged in the tissue culture of the model plants
- (ii) who are able and willing to join the COST Project.

For each model plant a subcommittee should be established. Each subcommittee has to specify details of the research programme. Consequently, each subcommittee should send an annual progress report to the Management Committee which will then collect all the information and circulate it to the national delegates.

In the initial years, work will be concentrated on coordination of existing work using the standardized methods suggested. In the final period, the research programme will be re-oriented to take account of the most recent developments. Besides the general requirements for coordination purposes (meetings of the Management Committee, Secretariat), this Project will need means for meetings, seminars, workshops, visits and short exchanges of research workers for the dissemination of knowledge and discussion of results and publications. Meetings should be organized in the form of reciprocal visits on a rotation system to be devised and should be backed up by demonstrations.

II. Indicative patterns of potential participation

Research topics	A	B	CH	D	DK	E	F	UK	GR	I	IRL	L	N	NL	P	S	SF	TR	YU
Apple rootstock M 26		X	X	X	X	X	X			X	X		X			X			
Cordyline		X		X		X					X			X		X			
Nephrolepis		X	X	X		X				X	X		X	X					
Gerbera		X		X		X				X	X			X					
Pelargonium		X	X	X	X	X	X				X		X			X			
Saintpaulia		X	X	X		X				X	X			X					

**Memorandum of Understanding
for carrying out a European research project
on *in vitro* cultures for the purification and
propagation of plants
(COST Project 87)**

Date of entry into force: 15.6.1983

Duration 14.6.1986

Contracting Parties	Date of signing	Date of entry into force
Belgium	15. 6.1983	15. 6.1983
Denmark	13.12.1983	13.12.1983
Germany (FR of)	15. 6.1983	15. 6.1983
Ireland	15. 6.1983	15. 6.1983
Italy	15.11.1983	15.11.1983
Netherlands	15. 6.1983	15. 6.1983
United Kingdom	15. 6.1983	15. 6.1983
Norway	15. 6.1983	15. 6.1983
Switzerland	15. 6.1983	15. 6.1983
Sweden	15. 6.1983	15. 6.1983

Cooperation Agreement
between the European Economic Community
and the Kingdom of Sweden on a
European research and development programme
in the field of wood as
a renewable raw material ¹
(Wood)

(¹) OJ L 185, 8.7.1983.

**Cooperation Agreement
between the European Economic Community
and the Kingdom of Sweden on a
European research and development programme
in the field of wood as
a renewable raw material**

(Wood)

THE EUROPEAN ECONOMIC COMMUNITY,
hereinafter referred to as 'the Community'

and

THE GOVERNMENT OF THE KINGDOM OF SWEDEN,
hereinafter referred to as 'Sweden',

WHEREAS a European research programme in the field of wood as a renewable raw material is likely to contribute to a more economic use of natural resources;

WHEREAS by its Decision of 17 May 1982, the Council of the European Communities, hereinafter referred to as 'the Council', adopted a research and development programme (1982 to 1985) in the raw materials sector including a sub-programme on wood as a renewable material, hereinafter referred to as 'the Community programme';

WHEREAS comprehensive forest and wood research programmes, taking into account biological, technological and economic factors, are carried out in Sweden, financed by in particular the Swedish Board for Technical Development, the Swedish Council for Forestry and Agricultural Research and the Swedish forest products industry;

WHEREAS the Community and Sweden expect to derive mutual benefit from a coordination of the research and development work which they carry out in the field of wood as a renewable raw material;

WHEREAS on 18 July 1978 the Council agreed on certain details of cooperation within the framework of European Cooperation in the field of Scientific and Technical Research (COST),

HAVE AGREED AS FOLLOWS:

Article 1

The Community and Sweden, hereinafter referred to as the 'Contracting Parties', shall cooperate for a period extending until 31 December 1985, in a European research and development programme in the field of wood as a renewable raw material (indirect actions and coordinated activities), hereinafter referred to as the 'European programme', as described in Annex A.

Article 2

The financial contribution by the Contracting Parties to the implementation of the European programme shall be 12 500 000 ECU to be divided as follows:

- (i) 12 million ECU from the Community for a four-year period beginning on 1 January 1982,
- (ii) 500 000 ECU from Sweden for the period referred to in Article 1.

The ECU is that defined in the Financial Regulation applicable to the general budget of the European Communities and in the financial provisions adopted pursuant to that Regulation.

The rules governing the financing of this Agreement are set out in Annex B.

Article 3

For Swedish persons and undertakings, the terms and conditions for the submission and evaluation of proposals, as well as for the granting and conclusion of shared-cost contracts, shall be the same as those applied for Community persons and undertakings.

Article 4

The Commission of the European Communities, hereinafter referred to as 'the Commission', shall ensure the implementation of the indirect actions and be responsible for the coordination of the coordinated activities of the European programme.

The Advisory Committee of the Community Programme, hereinafter referred to as 'the Committee', shall be enlarged to include representatives appointed by Sweden not exceeding three in number.

The terms of reference and the composition of the Committee are defined in accordance with the Council Resolution of 18 July 1977 on advisory committees on research programme management.

Article 5

The European programme shall be reviewed at the end of 1984. This review may result in a revision of the programme or in a new programme in accordance with the appropriate procedures after the Committee has been consulted.

Article 6

Information resulting from the execution of the indirect actions listed in Annex A shall be disseminated in accordance with the Council Regulation of 17 September 1974 adopting provisions for the dissemination of information relating to research programmes for the European Economic Community. The rights and obligations of Sweden and Swedish persons and undertakings shall be the same as those laid down by the above Regulation for Member States and persons and undertakings which pursue a research or production activity on the territory of a Member State.

Article 7

1. In accordance with a procedure laid down by the Commission after having consulted the Committee, Sweden and the Member States of the Community taking part in the coordinated activities listed in Annex A (hereinafter referred to as 'the participating States') and the Community shall regularly exchange all useful information resulting from the execution of the research covered by such activities. The participating States shall provide the Commission with all information relevant for coordination purposes. They shall also endeavour to provide the Commission with information on similar research planned or carried out by other bodies. Any information shall be treated as confidential if so requested by the participating State which provides it.

2. The Commission shall prepare annual progress reports on the basis of the information supplied and forward them to the participating States.

3. At the end of the coordination period the Commission, after having consulted the Committee, shall forward to the participating States a comprehensive report on the execution and results of the coordinated activities.

Article 8

The Contracting Parties shall consult with each other, if one of them so requests, on any problem arising out of the application of this Agreement.

Article 9

This Agreement shall apply, on the one hand, to the territories in which the Treaty establishing the European Economic Community is applied, under the conditions laid down in that Treaty, and, on the other hand, to the territory of the Kingdom of Sweden.

Article 10

1. As soon as possible after signing this Agreement, each of the Contracting Parties shall notify the Secretary-General of the Council of the European Communities of the completion of the procedures necessary under its internal provisions for the implementation of this Agreement.

2. This Agreement shall enter into force on the first day of the month following that in which the second of the Contracting Parties forwards the notification referred to in paragraph 1.

Prior to the entry into force of this Agreement, Sweden may take part in the work of the Committee.

3. Other European States which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 may be associated under fair and equitable conditions with the European Programme by separate Agreements with the Community.

The Community shall keep Sweden informed of such further Agreements.

4. The Secretary-General of the Council of the European Communities shall notify each of the Contracting Parties of the lodging of the noti-

fications referred to in paragraph 1 and of the date of entry into force of this Agreement.

Article 11

This Agreement, drawn up in a single original in the Danish, Dutch, English, French, German, Greek and Italian languages, each text being equally authentic, shall be deposited in the archives of the General Secretariat of the Council of the European Communities, which shall transmit a certified copy to each of the Contracting Parties.

Done at Brussels on the twenty-eighth day of June in the year one thousand nine hundred and eighty-three.

Council Decision
of 14 June 1983
on the conclusion of the Cooperation Agreement between the European
Economic Community and the Kingdom of Sweden on a
European research and development programme in the field
of wood as a renewable raw material

(83/329/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

HAVING regard to the Treaty establishing the European Economic Community,

HAVING regard to Council Decision 82/402/EEC of 17 May 1982 adopting a research and development programme (1982 to 1985) in the raw material sector ¹ including a sub-programme on wood as a renewable raw material, and in particular Article 7 (1) thereof,

HAVING regard to the draft Decision submitted by the Commission,

WHEREAS, pursuant to Article 7 (2) of Decision 82/402/EEC, the Commission has negotiated an Agreement with the Kingdom of Sweden in order to associate that country with the sub-programme on wood as a renewable raw material;

WHEREAS this Agreement should be approved,

HAS DECIDED AS FOLLOWS:

Article 1

The Cooperation Agreement between the European Economic Community and the Kingdom of Sweden on a European research and development programme in the field of wood as a renewable raw material is hereby approved on behalf of the Community.

The text of the Agreement is attached to this Decision.

Article 2

The President of the Council is hereby authorized to designate the persons empowered to sign the Agreement in order to bind the Community.

Done at Luxembourg, 14 June 1983.

For the Council

The President

I. Kiechle

¹ OJ L 174, 21.6.1982.

ANNEX A

Research and development programme

Research topics	Indirect action	Coordinated activity
<i>1. Wood production</i>		
1.1. Selection and improvement of forest reproductive material	x	x
1.2. Improvement of growth (silviculture)		
1.2.1. Treatment of site and stands	x	x
1.2.2. Establishment and management of fibre plantation	x	x
1.2.3. Cultivation and management of trees outside the forest	x	x
1.3. Prevention of losses		
1.3.1. Protection against damage from biotic agents	x	x
1.3.2. Prevention of forest fires	x	x
1.3.3. Protection against damage from other abiotic causes	x	x
1.4. Forest inventory	—	x
<i>2. Wood harvesting, storage and transport</i>		
2.1. Harvesting of biomass	x	x
2.2. Processing and storage of chips for industrial use	x	x
2.3. Harvesting systems for on-ground extraction	—	x
2.4. Harvesting systems for off-ground extraction	—	x
2.5. Safety and health aspects	—	x
<i>3. Wood as material</i>		
3.1. Study of wood properties	x	x
3.2. Improvement of performance and protection against deterioration	x	x
3.3. Development of objective testing methodology	x	x
<i>4. Wood processing without modification of its basic structure</i>		
4.1. Development of manufacturing processes and products	x	x
4.2. Adhesives and joints	x	x
4.3. Constructional use of wood		
4.3.1. More efficient use and re-use of wood in temporary works	x	x
4.3.2. Greater economy in use through improved design	x	x
4.3.3. Load duration effects	x	x
<i>5. Processing of wood and related organic materials into fibre products</i>		
5.1. Process and product development in the pulp industry	x	x
5.2. Better use of recycled waste paper, cereal straw and other fibres	x	x
5.3. Improvement of paper and board manufacturing processes	x	x

Research topics	Indirect action	Coordinated activity
6. <i>Wood as a source of chemicals</i>		
6.1. Development of processes to separate chemically the main components of materials containing ligno-cellulose substances	x	x
6.2. Utilization of lignin, hemicelluloses and cellulose	x	x
6.3. Recovery of by-products from chemical fibre processing	x	x

ANNEX B

Financing Rules

Article 1

These provisions lay down the financial rules referred to in Article 2 of the Agreement.

Article 2

At the beginning of each financial year, the Commission shall send to Sweden, a call for funds corresponding to its share of the annual costs under the Agreement, calculated in proportion to the maximum amounts laid down in Article 2 of the Agreement.

This contribution shall be expressed both in ECU and in the currency of Sweden, the value of the ECU being that defined in the Financial Regulation applicable to the general budget of the European Communities and determined on the date of the call for funds.

The total contributions shall cover the travel and subsistence costs of the delegates to the Committee, in addition to the implementation costs proper.

Sweden shall pay its annual contribution to the costs under the Agreement at the beginning of each year, and by 31 March at the latest. Any delay in payment shall give rise to the payment of interest by Sweden — at a rate equal to the highest discount rate obtaining in the participating States on the due date. The rate shall be increased by 0.25 of a percentage point for each month of delay. The increased rate shall be applied to the entire period of delay. However, such interest shall be chargeable only if payment is made more than three months after the issue of a call for funds by the Commission.

Article 3

The funds paid by Sweden shall be credited to the relevant programme as budget receipts allocated to a heading in the statement of revenue of the budget of the Commission.

Article 4

The provisional timetable for the implementation costs referred to in Article 2 of the Agreement is appended hereto.

Article 5

The Financial Regulation applicable to the general budget of the European Communities shall apply to the management of the appropriations.

Article 6

At the end of each financial year, a statement of appropriations for the European programme shall be prepared and transmitted to Sweden for information.

APPENDIX

Provisional timetable referred to in Article 4 of Annex B

	1982		1983		1984		1985		1986		Total	
	CA	PA	CA	PA	CA	PA	CA	PA	CA	PA	CA	PA
I. Initial estimate of overall requirements												
(a) staff	169 500	169 500	255 100	255 100	272 900	272 900	291 600	291 600	—	—	989 100	989 100
(b) administrative operating expenditure	89 300	89 300	107 600	107 600	114 000	114 000	120 000	120 000	—	—	430 900	430 900
(c) contracts	1 755 200	462 200	6 337 300	1 617 300	2 193 100	3 113 100	294 400	3 588 400	—	1 799 000	10 580 000	10 580 000
Total	2 014 000	721 000	6 700 000	1 980 000	2 580 000	3 500 000	706 000	4 000 000	—	1 799 000	12 000 000	12 000 000
II. Revised estimate of expenditure taking into account additional requirements deriving from the accession of Sweden												
(a) staff	169 500	169 500	255 100	255 100	272 900	272 900	291 600	291 600	—	—	989 100	989 100
(b) administrative operating expenditure	89 300	89 300	107 600	107 600	114 000	114 000	120 000	120 000	—	—	430 900	430 900
(c) contracts	1 839 800	492 100	6 609 700	1 699 300	2 302 200	3 258 000	325 300	3 754 100	—	1 876 500	11 080 000	11 080 000
New Total	2 098 600	750 900	6 972 400	2 062 000	2 689 100	3 644 900	736 900	4 165 700	—	1 876 500	12 500 000	12 500 000
III. Different between (1) and (2) to be covered by the contribution from Swe(b)	84 600	29 900	272 400	82 000	109 100	144 900	30 900	165 700	—	77 500	500 000	500 000

CA = Commitment appropriation
PA = Payment appropriation

**Cooperation Agreement between the European Economic Community
and the Kingdom of Sweden on a European research and development programme
in the field of wood as a renewable raw material**

(Wood)

Decision of Community programmes: 17.5.1982

Date of entry into force: 1.7.1983

Duration: 31.12.1985

Contracting Parties	Date of signing	Date of entry into force
EC	28.6.1983	1.7.1983
Sweden	28.6.1983	1.7.1983

**Memorandum of Understanding
for the implementation of a European research project
on systems of socio-technologies and
industrial safety
(COST Project A 1)**

Memorandum of Understanding for the implementation of a European research project on systems of socio-technologies and industrial safety

(COST Project A 1)

The Signatories to this Memorandum of Understanding, declaring their common intention to take part in a European research project on systems of socio-technologies and industrial safety, have reached the following understanding:

Section 1

1. The Signatories intend to cooperate in a project to promote research into systems of socio-technologies and industrial safety (hereinafter referred to as the 'Project').

2. The main objective of the Project is to develop new solutions to the man-machine interface design, thereby assessing operational risks for systems involving humans and equipment with specific emphasis on the field of human error.

3. The Signatories hereby declare their intention of carrying out the Project jointly, in accordance with the general description given in Annex II, adhering as far as possible to a timetable to be decided by the Management Committee referred to in Annex I.

4. The Project will be carried out through concerted action, in accordance with the provisions of Annex I.

5. The overall value of the activities of the Signatories under the Project is estimated at approximately 15 million ECU.

6. The Signatories will make every effort to ensure that the necessary funds are made available under their internal financing procedures.

Section 2

1. Signatories intend to take part in the Project in one or several of the following ways:

(a) by carrying out studies and research in their technical services or public research establishments (hereinafter referred to as 'public research establishments');

(b) by concluding contracts for studies and research with organizations (hereinafter referred to as 'research contractors');

(c) by providing the Secretariat, including facilities and expertise required, and other co-ordinatory services or activities necessary for the aims of the Project to be achieved.

2. In order to ensure an efficient management of the Project, in particular with regard to the evaluation of research proposals, the coordination of work, the evaluation of results and the drawing up of the final report, the Signatories intend to place the necessary experts for a limited time at the disposal of the Management Committee referred to in Annex I.

3. The Signatories intend to promote inter-laboratory visits.

Section 3

1. This Memorandum of Understanding will take effect for five years upon signature by at least three Signatories. It may be terminated upon the entry into force of a Community/COST Concertation Agreement in the same field as that covered by this Memorandum of Understanding.

2. This Memorandum of Understanding may be amended in writing at any time by arrangement between the Signatories.

3. A Signatory which intends, for any reason whatsoever, to terminate its participation in the Project will notify the Secretary-General of the Council of the European Communities of its intention as soon as possible, preferably not later than three months beforehand.

4. If at any time the number of Signatories falls below three, the Management Committee referred to in Annex I will examine the situation which has arisen and will consider whether or not this Memorandum of Understanding should be terminated by decision of the Signatories.

Section 4

1. This Memorandum of Understanding will, for a period of six months from the date of the first signing, remain open for signing by the governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and also by the European Communities.

The governments referred to in the first subparagraph and the European Communities may take part in the Project on a provisional basis during the abovementioned period, even though they may not have signed this Memorandum of Understanding.

2. After this period of six months has elapsed, applications to sign this Memorandum of Under-

standing from the governments referred to in paragraph 1 or from the European Communities will be decided upon by the Management Committee referred to in Annex I, which may attach special conditions thereto.

3. Any Signatory may designate one or more competent public authorities or bodies to act on its behalf, in respect of the implementation of the Project.

Section 5

This Memorandum of Understanding is of an exclusively recommendatory nature. It will not create any binding legal effect in public international law.

Section 6

1. The Secretary-General of the Council of the European Communities will inform all Signatories of the signing dates and of the date of entry into effect of this Memorandum of Understanding and will forward to them all notices which he has received under this Memorandum of Understanding.

2. This Memorandum of Understanding will be deposited with the General Secretariat of the Council of the European Communities. The Secretary-General will forward a certified copy to each of the Signatories.

Done at Brussels on the twenty-second day of September in the year one thousand nine hundred and eighty-three.

ANNEX I

Coordination of the Project

CHAPTER I

1. A Management Committee (hereinafter referred to as 'the Committee') will be set up, composed of not more than two representatives for each Signatory. Each representative may be accompanied by such experts or advisers as he or she may need.

The governments which took part in the Ministerial Conference held in Brussels on 22 or 23 November 1971 and the European Communities may, in accordance with the second paragraph of Section 4 (1) of the Memorandum of Understanding, participate in the work of the Committee before becoming Signatories to the Memorandum without, however, having the right to vote.

2. The Committee will be responsible for coordinating the Project and, in particular, for making the necessary arrangements for:

- (a) the choice of research topics on the basis of those provided for in Annex II, including any modifications submitted to Signatories by the competent public authorities or bodies; any proposed changes to the Project framework will be referred for an opinion to the Committee of Senior Officials on Scientific and Technical Research (COST);
- (b) examining, selecting and adopting, on the basis of industrial priorities, research proposals made under the Project, while ensuring that each project forms the subject of collaboration between participants from two or more Signatories.
- (c) advising on the direction which work should take;
- (d) drawing up detailed plans and defining methods for the different phases of execution of the Project;
- (e) coordinating the contributions referred to in Section 2 (1) (c) of the Memorandum of Understanding;
- (f) choosing, in liaison with the Signatories concerned, the experts referred to in Section 2 (2) of the Memorandum of Understanding, and for giving them instructions;
- (g) keeping abreast of the research being done in the territory of the Signatories and in other countries;
- (h) exchanging research results among the Signatories to the extent compatible with adequate safeguards for the interests of Signatories, their competent public authorities or bodies and research contractors in respect of industrial property rights and commercially confidential material;
- (i) promoting and organizing conferences in the field of the Project;
- (j) drawing up the annual interim reports and the final report to be submitted to the Signatories and circulated as appropriate;
- (k) dealing with any problem which may arise out of the execution of the Project, including those relating to possible special conditions to be attached to accession to the Memorandum of Understanding in the case of applications submitted more than six months after the date of the first signing.

3. The Committee will establish its rules of procedure.

4. The Secretariat of the Committee will be provided at the invitation of the Signatories by either the Commission of the European Communities or one of the Signatory States.

CHAPTER II

1. Signatories will invite public research establishments or research contractors in their territories to submit proposals for research work to their respective competent public authorities or bodies. Proposals accepted under this procedure will be submitted to the Committee.
2. Signatories will request public research establishments or research contractors, before the Committee takes any decision on a proposal, to submit to the public authorities or bodies referred to in paragraph 1 notification of previous commitments and industrial property rights which they consider might preclude or hinder the execution of the projects of the Signatories.

CHAPTER III

1. Signatories will require their public research establishments or research contractors to submit periodical progress reports and a final report.
2. Distribution of progress reports will be restricted to the representatives of the Signatories within the Committee. The Signatories will treat these progress reports as confidential and will not use them for purposes other than research work. The final reports on the results obtained will have much wider circulation, covering at least the Signatories public research establishments or research contractors concerned.

CHAPTER IV

1. In order to facilitate the exchange of results referred to in Chapter I (2) (h), and subject to national law, Signatories intend to ensure, through the inclusion of appropriate terms in research contracts, that the owners of industrial property rights and technical information resulting from work carried out in implementation of that part of the Project assigned to them under Annex II (hereinafter referred to as 'the research results') will be under an obligation, if so requested by another Signatory (hereinafter referred to as 'the applicant Signatory'), to supply the research results and to grant to the applicant Signatory or to a third party nominated by the applicant Signatory a licence to use the research results and such technical know-how incorporated therein as is necessary for such use if the applicant Signatory requires the granting of a licence for the execution of work in respect of the Project.

Such licences will be granted on fair and reasonable terms, having regard to commercial usage.

2. Signatories will, by including appropriate clauses in contracts placed with research contractors, provide for the licence referred to in paragraph 1 to be extended on fair and reasonable terms, having regard to commercial usage, to previous industrial property rights and to prior technical know-how acquired by the research contractor insofar as the research results could not otherwise be used for the purpose referred to in paragraph 1.

Where a research contractor is unable or unwilling to agree to such extension, the Signatory will submit the case to the Committee before the contract is concluded; hereafter, the Committee will state its position on the case, if possible after having consulted the interested parties.

3. Signatories will take any steps necessary to ensure that the fulfilment of the conditions laid down in this Chapter will not be affected by any subsequent transfer of rights to ownership of the research results. Any such transfer will be notified to the Committee.

4. If a Signatory terminates its participation in the Project, any rights of use which it has granted, or is obliged to grant, to, or has obtained from, other Signatories in application of the Memorandum of Understanding and concerning work carried out up to the date on which the said Signatory terminates its participation will continue thereafter.

5. The provisions of paragraphs 1 to 4 will continue to apply after the period of operation of the Memorandum of Understanding has expired and will apply to industrial property rights as long as these remain valid, and to unprotected inventions and technical know-how until such time as they pass into the public domain other than through disclosure by the licensee.

ANNEX II

Technical Annex

Systems of socio-technologies and industrial safety

Introduction

The consequence of human errors in the operation of the complex industrial systems inherent in such industries as petro-chemical products, glass-making, steel-making, off-shore oil drilling, conventional and nuclear power generation and the like has clearly been shown as significant to the safety of plant personnel and the community at large. Apart from natural hazards over which man has little control, most accidents involving injury or fatality can be related to human failure. This failure can occur in the design, manufacture, supply, construction, installation, commissioning, operational maintenance and testing of the plant. While it is not practicable to examine human error in all these phases of a plant's life cycle, a significant advance in safety is possible through research on a limited area of human performance.

For a plant to move to the dynamic state of operation, human beings are required for operational control and for maintenance and testing. For the majority of industrial plants, the wide variety of plant conditions that might take the plant from a safe to a dangerous state requires human monitoring and action to maintain or restore a safe situation. Even where automatic shutdown systems are available it is usually necessary for operator intervention to ensure safety for an appreciable interval following the shutdown. Indeed, in general, plant safety is maintained by the frequent positive interventions of the operator based on his appreciation of current changes in the plant's operation. Failure and errors in evaluating these changes or inappropriate intervention may lead to a high risk situation.

In all this, the effective performance of the human operator is crucially dependent on the flow of information from the system to the operator, his evaluation of the information and the human compatibility of the means available to him for corrective action (the man/machine interface). Consideration of these aspects is therefore a vital part of the design process.

An analysis of past incidents in hazardous industries and current research data has shown that there is a need to develop improved solutions to this man-machine system design.

Within the human information evaluation function there will be a further important parameter: the operator's risk-taking behaviour. Human performance in this respect may be considered in terms of:

- (a) the likelihood of error in controlling or shutting down plant with respect to normal or abnormal conditions, thereby increasing risk;
- (b) the probability of injecting 'demands' on safety systems due to errors (in operation and maintenance) thereby increasing hazard frequency;
- (c) the reduction in safety due to errors in the testing or maintenance of safety-related equipments;
- (d) the economic penalty due to reduced availability or efficiency as a result of spurious plant 'trips' or shutdowns stemming from human error.

Thus, in order to assess the potential for human error within the total system there is a need for:

- (i) assessment models to allow the various tasks to be analysed in discreet steps, in part or as a whole: error probabilities then being estimated by taking due account of relevant performance-shaping factors;

- (ii) human error data obtained from relevant plant applications or from techniques that enable such data to be calculated on the basis of the predicted situation and performance-shaping factors.

This aspect of human performance has shown a need for programmes for assessing operational risks for systems involving humans and equipment with specific emphasis on human error.

Objectives

With these considerations in mind, a series of collaborative research programmes will be undertaken which will allow:

- (a) the development and application of ergonomics principles to new technology in high-risk industries;
- (b) the assessment and management of potential risks in the control, by human operators, of complex technological equipment;
- (c) the development of standards for increased safety in the high-risk industries.

Scope of work

The proposed areas of work will be relevant to industrial research organizations as well as national establishments which are concerned with the above objectives in process-control industries, or other industries which must adopt these objectives by virtue of the introduction of new technology.

Specific research topics

Developing improved solutions for the man-machine system design

- (a) Human information processing
- (b) The principles of man-computer interaction
- (c) Operational decision aids
- (d) Human factors in design
- (e) The influence of work organization
- (f) The influence of work environment
- (g) The planning and evaluation of operator training.

Assessing operational risks for systems involving humans and equipment

- (h) Methods of risk assessment with respect to the human operator
- (i) Operational risk management and control
- (j) Human reliability models
- (k) Establishment of a human reliability data base
- (l) The development of computer models for human risk assessment
- (m) The development of auditing procedures.

**Memorandum of Understanding
for the implementation of a European research project
on systems of socio-technologies and
industrial safety
(COST Project A 1)**

Date of entry into force: 22.9.1983

Duration: 21.9.1988

Contracting Parties	Date of signing	Date of entry into force
EC	15.3.1984	15.3.1984
Germany (FR of)	20.10.1983	20.10.1983
France	15.12.1983	15.12.1983
Netherlands	22.9.1983	22.9.1983
United Kingdom	22.9.1983	22.9.1983
Finland	22.9.1983	22.9.1983

**Memorandum of Understanding
for the implementation of a European research project
on materials for steam turbines**

(COST Project 505)

Memorandum of Understanding for the implementation of a European research project on materials for steam turbines

(COST Project 505)

The Signatories to this Memorandum of Understanding, declaring their common intention to take part in a European research project on materials for steam turbines have reached the following understandings:

Section 1

1. The Signatories intend to cooperate in a project to promote research into materials for steam turbines (hereinafter referred to as the 'Project').

2. The main aim of the Project is to improve the efficiency and reliability of steam turbines by an improved knowledge of materials behaviour in conditions relevant to service.

Specific technical objectives would be:

(a) to improve the efficiency of design of turbine components;

(b) to ensure that materials with adequate performance are available to meet new demands of the industry;

(c) to provide an improved basis for the estimation of remaining life in conservatively designed turbine equipment.

3. The Signatories hereby declare their intention of carrying out the Project jointly, in accordance with the general description given in Annex II, adhering as far as possible to a timetable to be decided by the Management Committee referred to in Annex I.

4. The Project will be carried out through concerted action, in accordance with the provisions of Annex I.

5. The overall value of the activities of the Signatories under the Project is estimated at approximately 6 million ECU at 1982 prices.

6. The Signatories will make every effort to ensure that the necessary funds are made available under their internal financing procedures.

Section 2

1. Signatories intend to take part in the Project in one or several of the following ways:

(a) by carrying out studies and research in their technical services or public research establishments (hereinafter referred to as 'public research establishments');

(b) by concluding contracts for studies and research with organizations (hereinafter referred to as 'research contractors');

(c) by providing the Secretariat, including facilities and expertise required, and other co-ordinatory services or activities necessary for the aims of the Project to be achieved.

2. In order to ensure an efficient management of the Project, in particular with regard to the appreciation of research proposals, the coordination of work, the evaluation of results and the drawing up of the final report, the Signatories intend to place the necessary experts for a limited time at the disposal of the Management Committee referred to in Annex I.

3. The Signatories intend to promote inter-laboratory visits.

Section 3

1. This Memorandum of Understanding will take effect for three years upon signature by at least five Signatories. It may be terminated upon the entry into force of a Community-COST Concertation Agreement in the same field as that covered by this Memorandum of Understanding.

2. This Memorandum of Understanding may be amended in writing at any time by arrangement between the Signatories.

3. A Signatory which intends for any reason whatsoever to terminate its participation in the Project will notify the Secretary-General of the Council of the European Communities of its intention as soon as possible, preferably not later than three months beforehand.

4. If at any time the number of Signatories falls below four, the Management Committee referred to in Annex I will examine the situation which has arisen and will consider whether or not this Memorandum of Understanding should be terminated by decision of the Signatories.

Section 4

1. This Memorandum of Understanding will, for a period of six months from the date of the first signing, remain open for signing by the governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and by the European Communities.

The governments referred to in the first subparagraph and the European Communities may take part in the Project on a provisional basis during the abovementioned period even though they may not have signed this Memorandum of Understanding.

2. After this period of six months has elapsed, applications to sign this Memorandum of Understanding from the governments referred to in paragraph 1 or from the European Communities will be decided upon by the Management Committee referred to in Annex I, which may attach special conditions thereto.

3. Any Signatory may designate one or more competent public authorities or bodies to act on its behalf, in respect of the implementation of the Project.

Section 5

This Memorandum of Understanding is of an exclusively recommendatory nature. It will not create any binding legal effect in public international law.

Section 6

1. The Secretary-General of the Council of the European Communities will inform all Signatories of the signing dates and of the date of entry into effect of this Memorandum of Understanding and will forward to them all notices which he has received under this Memorandum of Understanding.

2. This Memorandum of Understanding will be deposited with the General Secretariat of the Council of the European Communities. The Secretary-General will forward a certified copy to each of the Signatories.

Done at Brussels on the sixth day of October in the year one thousand nine hundred and eighty-three.

ANNEX I

Coordination of the Project

CHAPTER I

1. A Management Committee (hereinafter referred to as 'the Committee') will be set up, composed of not more than two representatives for each Signatory. Each representative may be accompanied by such experts or advisers as he or she may need.

The governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and the European Communities may, in accordance with the second subparagraph of Section 4 point 1 of the Memorandum of Understanding, participate in the work of the Committee before becoming Signatories to the Memorandum without, however, having the right to vote.

2. The Committee will be responsible for coordinating the Project and in particular for making the necessary arrangements for:

- (a) the choice of research topics on the basis of those provided for in Annex II, including any modifications submitted to Signatories by the competent public authorities or bodies; any proposed changes to the Project framework will be referred for an opinion to the Committee of Senior Officials on Scientific and Technical Research (COST);
- (b) examining, selecting and adopting, on the basis of industrial priorities, research proposals made under the Project, while ensuring that each project forms the subject of collaboration between participants from two or more Signatories;
- (c) advising on the direction which work should take;
- (d) drawing up detailed plans and defining methods for the different phases of execution of the Project;
- (e) coordinating the contributions referred to in point 1 (c) of Section 2 of the Memorandum of Understanding;
- (f) choosing, in liaison with the Signatories concerned, the experts referred to in Section 2, point 2, of the Memorandum of Understanding, and for giving them instructions;
- (g) keeping abreast of the research being done in the territory of the Signatories and in other countries;
- (h) assuring the necessary coordination with the activities in the same field, carried out within COST 501 (Annex II-C-5);
- (i) exchanging research results among the Signatories to the extent compatible with adequate safeguards for the interests of Signatories, their competent public authorities or bodies and research contractors in respect of industrial property rights and commercially confidential material;
- (j) promoting and organizing conferences in the field of the Project;
- (k) drawing up the annual interim reports and the final report to be submitted to the Signatories and circulated as appropriate;
- (l) dealing with any problem which may arise out of the execution of the Project, including those relating to possible special conditions to be attached to accession to the Memorandum of Understanding in the case of applications submitted more than six months after the date of the first signing.

3. The Committee will establish its rules of procedure.

4. The Secretariat of the Committee will be provided at the invitation of the Signatories by either the Commission of the European Communities or one of the Signatory States.

CHAPTER II

1. Signatories will invite public research establishments or research contractors in their territories to submit proposals for research work to their respective competent public authorities or bodies. Proposals accepted under this procedure will be submitted to the Committee.

2. Signatories will request public research establishments or research contractors, before the Committee takes any decision on a proposal, to submit to the public authorities or bodies referred to in paragraph 1 notification of previous commitments and industrial property rights which they consider might preclude or hinder the execution of the projects of the Signatories.

CHAPTER III

1. Signatories will require their public research establishments or research contractors to submit periodical progress reports and a final report.

2. Distribution of progress reports will be restricted to the representatives of the Signatories within the Committee. The Signatories will treat these progress reports as confidential and will not use them for purposes other than research work. The final reports on the results obtained will have much wider circulation, covering at least the Signatories' public research establishments or research contractors concerned.

CHAPTER IV

1. In order to facilitate the exchange of results referred to in Chapter I, paragraph 2 (i), and subject to national law, Signatories intend to ensure, through the inclusion of appropriate terms in research contracts, that the owners of industrial property rights and technical information resulting from work carried out in implementation of that part of the Project assigned to them under Annex II (hereinafter referred to as 'the research results') will be under an obligation, if so requested by another Signatory (hereinafter referred to as 'the applicant Signatory'), to supply the research results and to grant to the applicant Signatory or to a third party nominated by the applicant Signatory a licence to use the research results and such technical know-how incorporated therein as is necessary for such use if the applicant Signatory requires the granting of a licence for the execution of work in respect of the Project.

Such licences will be granted on fair and reasonable terms, having regard to commercial usage.

2. Signatories will, by including appropriate clauses in contracts placed with research contractors, provide for the licence referred to in paragraph 1 to be extended on fair and reasonable terms, having regard to commercial usage, to previous industrial property rights and to prior technical know-how acquired by the research contractor insofar as the research results could not otherwise be used for the purpose referred to in paragraph 1.

Where a research contractor is unable or unwilling to agree to such extension, the Signatory will submit the case to the Committee before the contract is concluded; hereafter, the Committee will state its position on the case, if possible after having consulted the interested parties.

3. Signatories will take any steps necessary to ensure that the fulfilment of the conditions laid down in this Chapter will not be affected by any subsequent transfer of rights to ownership of the research results. Any such transfer will be notified to the Commission.

4. If a Signatory terminates its participation in the Project, any rights of use which it has granted, or is obliged to grant, to, or has obtained from, other Signatories in application of the Memorandum of Understanding and concerning work carried out up to the date on which the said Signatory terminates its participation will continue thereafter.

5. The provisions of paragraphs 1 to 4 will continue to apply after the period of operation of the Memorandum of Understanding has expired and will apply to industrial property rights as long as these remain valid and to unprotected inventions and technical know-how until such time as they pass into the public domain other than through disclosure by the licensee.

ANNEX II

General description of the Project

A. Introduction

Consumer preference for electricity as a clean, versatile energy source has been clearly demonstrated in recent years and increased electrification of industry is inevitable. Electricity has unequalled ability to speed up automation and increase productivity, and new microprocessor technology will increase that ability even further. The competitiveness of industry will thus depend in growing measure on the price of electric power. Whilst a number of ways of producing steam are available, e.g. by burning coal or oil or by the fissioning of uranium in reactors cooled by water or CO₂, the steam turbine/generator remains the most widely used vehicle for turning heat into electricity. Efficient steam turbines are therefore a cornerstone of prosperous economies.

In the last forty years or so, European power producing industries have made a large investment in materials research to improve the efficiency and reliability of steam turbine plant. However, many problems remain. Some of these are associated with the steady growth in unit size of turbines which leads, in particular, to requirements for larger forgings and castings, with associated problems of quality and properties. Furthermore, the use of high output units leads to very high costs of outages (plant shut-down) which results from unplanned repairs when component failure occurs.

For the same reason there is pressure from the utilities to increase times between scheduled maintenance periods. The need to minimize losses due to outages has led to increased efforts to improve component reliability and thereby to reduce direct operating costs. Other problems arise as a consequence of the changing circumstances in which the electricity generating industries in many industrialized countries now operate. For example, elderly plant originally designed for base-load operation has frequently to be used for peak-opping with rapid start-up and shut-down which can be highly damaging to critical components. The lifetime of plant working in this way cannot readily be estimated. Also, benefits in increased efficiency resulting from higher operating temperatures, particularly in the smaller industrial turbines, and from novel design concepts place new demands on traditional materials and provide the incentive for the development of improved alloys.

In addition, a major interest has developed in determining the remaining life of existing elderly power plant. The capital costs of installing new equipment are extremely high and it is generally recognized that the design methods used 10 - 20 years ago were conservative, perhaps very conservative. Consequently there is every likelihood that a plant designed for a life of 20 years will last much longer but it is an important and demanding task to accurately predict the increased length of service that can be tolerated with safety. Hence the problem of estimating remaining life in critical components of steam power plant has become a materials problem of major importance world-wide.

For these technical reasons therefore, materials research remains an essential requirement.

The programme is strongly supported not only by the countries with significant steam turbine manufacturing facilities but also by those without an indigenous industry that use steam power plant manufactured in other countries.

The execution of the Project will require the participation of the manufacturers and the users of steam turbines as well as that of the alloy producers. Effective cooperation is anticipated.

B. Objectives

The basic considerations in the description of the Project have been:

- (a) to provide opportunity for collaborative research on a wide range of topics of particular relevance between steam power plant manufacturers, users of steam turbines and alloys producers;
- (b) to support and coordinate these activities to improve the competitive position of the industry;
- (c) to provide a better exploitation of the existing elderly power plant by an improved basis for the estimation of remaining life in conservatively designed turbine equipment.

C. Technical research areas

The programme is restricted to steam turbines and thus the problems connected with boilers and generators are not covered. There is one exception, however, namely, work on the determination of residual life, which includes high pressure steam pipes.

- (1) Effects of environment on properties:
 - (a) stress corrosion cracking in disc and rotor steels,
 - (b) corrosion fatigue of blade and rotor steels,
 - (c) protective coatings.
- (2) Fracture mechanics:
 - (a) sub-critical crack growth,
 - (b) residual stress,
 - (c) factors controlling toughness,
 - (d) effects of short cracks,
 - (e) isothermal embrittlement.
- (3) Corrosion-erosion and hard-facing materials.
- (4) Bolting materials:
 - (a) negative creep,
 - (b) improved steels.
- (5) Estimation of residual life:
 - (a) stress analysis,
 - (b) development of mechanical tests,
 - (c) extrapolation techniques,
 - (d) non-destructive testing methods.
- (6) Effects of welding and stress relief:
 - (a) complex stress effects,
 - (b) residual stresses,
 - (c) properties of HAZ's.

(7) Increased reliability of components:

- (a) improved rotors,
- (b) development of improved blade materials including Ti alloys.

(8) High temperature properties:

- (a) creep in complex stress conditions,
- (b) creep crack growth,
- (c) creep-fatigue interaction.

**Memorandum of Understanding
for the implementation of a European research project
on materials for steam turbines
(COST Project 505)**

Date of entry into force: 6.10.1983

Duration: 5.10.1986

Contracting Parties	Date of signing	Date of entry into force
EC	2.12.1983	2.12.1983
Belgium	6.10.1983	6.10.1983
Denmark	25.10.1984	25.10.1984
Germany (FR of)	6.10.1983	6.10.1983
United Kingdom	6.10.1983	6.10.1983
Italy	5.12.1984	5.12.1984
Austria	24.7.1984	24.7.1984
Switzerland	29.3.1984	29.3.1984
Finland	6.10.1983	6.10.1983
Sweden	6.10.1983	6.10.1983

**Memorandum of Understanding
for the implementation of a European research project
on antennae in the 1990s — electronically steered
antennae for future satellite
and terrestrial communications**

(COST Project 213)

Memorandum of Understanding for the implementation of a European research project on antennae in the 1990s — electronically steered antennae for future satellite and terrestrial communications

(COST Project 213)

The Signatories to this Memorandum of Understanding, declaring their common intention to take part in a European research project on antennae in the 1990s — electronically steered antennae for future satellite and terrestrial communications, have reached the following understandings:

Section 1

1. The Signatories intend to cooperate in a project to promote research into the field of electronically steered antennae for future satellite and terrestrial communications, hereinafter referred to as the 'Project'.

2. The main objective of the Project is to coordinate and advance European research into phased array antennae and in particular to undertake research into various new fields of application.

3. The Signatories hereby declare their intention of carrying out the Project jointly, in accordance with the general description given in Annex II, adhering as far as possible to a timetable to be decided by the management Committee referred to in Annex I.

4. The Project will be carried out through concerted action, in accordance with the provisions of Annex I.

5. The overall value of the activities of the Signatories under the project is estimated at approximately 700 000 ECU at 1983 prices.

6. The Signatories will make every effort to ensure that the necessary funds are made available under their internal financing procedures.

Section 2

Signatories intend to take part in the Project in one or several of the following ways:

(a) by carrying out studies and research in their technical services or public research establishments (hereinafter referred to as 'public research establishments');

(b) by concluding contracts for studies and research with organizations (hereinafter referred to as 'research contractors');

(c) by contributing to the provision of a Secretariat and/or other coordinatory services or activities necessary for the aims of the Project to be achieved;

(d) by making information on existing relevant research, including all necessary basic data, available to other Signatories,

(e) by arranging for inter-laboratory visits and by cooperating in a small-scale exchange of staff in the later stages.

Section 3

1. This Memorandum of Understanding will take effect for three years on its signing by at least five Signatories.

2. This Memorandum of Understanding may be amended in writing at any time by arrangement between the Signatories.

3. A Signatory which intends, for any reason whatsoever, to terminate its participation in the Project will notify the Secretary-General of the Council of the European Communities of its intention as soon as possible, preferably not later than three months beforehand.

4. If at any time the number of Signatories falls below five, the Management Committee referred to in Annex I will examine the situation which has arisen and will consider whether or not this Memorandum of Understanding should be terminated by decision of the Signatories.

Section 4

1. This Memorandum of Understanding will, for a period of six months from the date of the first signing, remain open for signing by the governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and also by the European Communities and the European Space Agency.

The governments referred to in the first subparagraph, the European Communities and the European Space Agency may take part in the Project on a provisional basis during the abovementioned period, even though they may not have signed this Memorandum of Understanding.

2. After this period of six months has elapsed, applications to sign this Memorandum of Understanding from the governments referred to in paragraph 1, from the European Communities or from the European Space Agency will be decided

upon by the Management Committee referred to in Annex I, which may attach special conditions thereto.

3. Any Signatory may designate one or more competent public authorities or bodies to act on its behalf in respect of the implementation of the Project.

Section 5

This Memorandum of Understanding is of an exclusively recommendatory nature. It will not create any binding legal effect in public international law.

Section 6

1. The Secretary-General of the Council of the European Communities will inform all Signatories of the signing dates and date of entry into effect of this Memorandum of Understanding and will forward to them all notices which he has received under this Memorandum of Understanding.

2. This Memorandum of Understanding will be deposited with the General Secretariat of the Council of the European Communities. The Secretary-General will transmit a certified copy to each of the Signatories.

Done at Brussels on the thirty-first day of October in the year one thousand nine hundred and eighty-four.

ANNEX I

Coordination of the Project

CHAPTER I

1. A Management Committee (hereinafter referred to as 'the Committee') will be set up, composed of not more than two representatives for each Signatory. Each representative may be accompanied by such experts or advisers as he or she may need.

The governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971, the European Space Agency and the European Communities may, in accordance with the second subparagraph of Section 4 (1) of the Memorandum of Understanding, participate in the work of the Committee before becoming Signatories to the Memorandum without, however, having the right to vote.

When the European Communities are not a Signatory to the Memorandum of Understanding, a representative of the Commission of the European Communities may attend Committee meetings as an observer.

2. The Committee will be responsible for coordinating the Project and, in particular, for making the necessary arrangements for:

- (a) the choice of research topics on the basis of those provided for in Annex II, including any modifications submitted to Signatories by the competent public authorities or bodies; any proposed changes to the Project framework will be referred for an opinion to the Technical Committee 'Telecommunications' (COST);
- (b) advising on the direction which work should take;
- (c) drawing up detailed plans and defining methods for the different phases of execution of the Project;
- (d) coordinating the contributions referred to in subparagraph (c) of Section 2 of the Memorandum of Understanding;
- (e) keeping abreast of the research being done in the territory of the Signatories and in other countries;
- (f) liaising with appropriate international bodies;
- (g) exchanging research results among the Signatories to the extent compatible with adequate safeguards for the interests of Signatories, their competent public authorities or bodies and research contractors in respect of industrial property rights and commercially confidential material;
- (h) drawing up the annual interim reports and the final report to be submitted to the Signatories and circulated as appropriate;
- (i) dealing with any problem which may arise out of the execution of the Project, including those relating to possible special conditions to be attached to accession to the Memorandum of Understanding in the case of applications submitted more than six months after the date of the first signing.

3. The Committee will establish its rules of procedure.

4. The Secretariat of the Committee will be provided at the invitation of the Signatories by either the Commission of the European Communities or one of the Signatory States.

CHAPTER II

1. Signatories will invite public research establishments or research contractors in their territories to submit proposals for research work to their respective competent public authorities or bodies. Proposals accepted under this procedure will be submitted to the Committee.

2. Signatories will request public research contractors, before the Committee takes any decision on a proposal, to submit to the public authorities or bodies referred to in paragraph 1 notification of previous commitments and industrial property rights which they consider might preclude or hinder the execution of the Projects of the Signatories.

CHAPTER III

1. Signatories will request their public research establishments or research contractors to submit periodical progress reports and a final report.

2. The progress reports will be distributed to the Signatories only, through their representatives on the Committee. The Signatories will treat these progress reports as confidential and will not use them for purposes other than research work. The final reports on the results obtained will have much wider circulation, covering at least the Signatories' public research establishments or research contractors concerned.

CHAPTER IV

1. In order to facilitate the exchange of results referred to in Chapter I, paragraph 2(g), and subject to national law, Signatories intend to ensure, through the inclusion of appropriate terms in research contracts, that the owners of industrial property rights and technical information resulting from work carried out in implementation of that part of the Project assigned to them under Annex II (hereinafter referred to as 'the research results') will be under an obligation, if so requested by another Signatory (hereinafter referred to as 'the applicant Signatory'), to supply the research results and to grant to the applicant Signatory or to a third party nominated by the applicant Signatory a licence to use the research results and such technical know-how incorporated therein as is necessary for such use if the applicant Signatory requires the granting of a licence for the execution of:

- (a) work in respect of the Project;
- (b) research and development work within the framework of the applicant Signatory's projects in the same field;
- (c) research and development work within the framework of any associated European project undertaken subsequently and in which all or several of the Signatories may be prepared to take part.

Such licences will be granted on fair and reasonable terms, having regard to commercial usage.

2. Signatories will, by including appropriate clauses in contracts placed with research contractors, provide for the licence referred to in paragraph 1 to be extended on fair and reasonable terms, having regard to commercial usage, to previous industrial property rights and to prior technical know-how acquired by the research contractor insofar as the research results could not otherwise be used for the purpose referred to in paragraph 1.

Where a research contractor is unable or unwilling to agree to such extension, the Signatory will submit the case to the Committee, before the contract is concluded; hereafter, the Committee will state its position on the case, if possible after having consulted the interested parties.

3. Signatories will take any steps necessary to ensure that the fulfilment of the conditions laid down in the present Chapter will not be affected by any subsequent transfer of rights to ownership of the research results. Any such transfer will be notified to the Committee.
4. If a Signatory terminates its participation in the Project, any rights of use which it has granted, or is obliged to grant, to, or has obtained from, other Signatories in application of the Memorandum of Understanding and concerning work carried out up to the date on which the said Signatory terminates its participation will continue thereafter.
5. The provisions of paragraphs 1 to 4 will continue to apply after the period of operation of the Memorandum of Understanding has expired and will apply to industrial property rights as long as these remain valid, and to unprotected inventions and technical know-how until such time as they pass into the public domain other than through disclosure by the licensee.

General description of the Project

1. Introduction

Phased arrays offer several advantages over mechanically steered antennae. Since the beam direction can be changed very fast, one antenna is able to fulfil several tasks in time-multiplex operation. A properly designed feeding network even allows various tasks to be performed at the same time. With the aid of an electronic control, the radiation pattern can be adapted to the coverage area or to the angles of incidence of wanted signals or unwanted signals and noise (adaptive antennae). However, at present, this great variety of possible applications involves one major disadvantage: the high cost incurred for the implementation of such antennae. The expenditure depends on the antenna concept and on the progress of technological developments, many of which are rapidly changing the economics of different systems. This is the reason why a great deal of the research activity in the field is dedicated to these two problems, in order to open up new possibilities of application.

At the moment, particular attention is being paid to applications in highly directive radio links (multibeam antennae). In addition, the developments in the field of non-planar arrays (conformal arrays) are of great interest to antennae having a large scanning angle and to antennae adapted to the shape of flying objects.

2. Objectives of the project

The main objective of the Project is to coordinate and advance European research into phased array antennae, in particular to carry out research into various new fields of application, and to undertake a large-scale exchange of information on the experiences and results obtained. The principal advantages of international collaboration are that comparisons can be made between a number of different situations, international standardization of systems is facilitated by joint planning in early design, software can be centralized, and more rapid progress may be achieved than with individual, uncoordinated efforts.

3. Scope of the project

The previous COST 204 project represented a very diverse range of interests. New members joined the Project at various stages and a truly collaborative effort with a coherent plan was not possible. The benefits of COST 204 have come in the general interaction between members, the visits to laboratories and the COST 204/ESA Workshop.

A chance now exists to plan a new format for the organization of the technical work, which should lead to more coherence in the outputs. It is also proposed that, at the end of the project period, results be presented, discussed and compared in an open symposium, from which new objectives and avenues of research could be determined for the future.

It is proposed to divide the project activities into two groups:

- (i) the coordinated activities covering three well-defined developments: one on microstrip elements, one on beam forming networks and one on array software. Each participant country agrees to contribute in a coordinated manner, to one or more of the above developments;

- (ii) the activities for exchange of technical information, including a range of developments, proposed by each participant country, that cannot easily be harmonized into a collaborative multinational effort, but can be discussed and compared within the project group in a mutually beneficial fashion.

The organization of the Project with coordinated activities for exchange of technical information and an open symposium at the end of the Project period should go further to assist participating countries to acquire a basis of up to date technology and software, to find better solutions for their specific phased array applications and to evaluate and orient their research and development efforts in the phased array field.

The technical programme of work is more fully described in point 5.

4. Appropriate form for cooperation

The suggested form of cooperation is that Signatories are represented in the Committee by delegates who would be expected to:

- (a) attend and contribute to meetings of the Committee, these meetings typically numbering four annually;
- (b) be involved in an active programme of phased array research, partially or totally harmonized with at least one of the Project coordinated activities described in point 5.

Signatories are also expected to organize at least one meeting of the Committee at their public research establishments during the period of the Project.

It is envisaged that, during the available Project timescale of three years, each Signatory would be responsible for the development of components and/or software routines to be integrated in the framework of the coordinated activities described in point 5.

5. Technical programme

The technical programme with the members' proposed contributions is described below.

5.1. Coordinated activities

5.1.1. Analysis and development of microstrip array elements (B, D, ESA, F, I, S, SF, UK)

The objective of this activity is to bring the analysis and development maturity of microstrip array elements to a level compatible with viable industrial production for applications ranging from adaptive arrays to satellite antennae. The following contributions to be coordinated in this activity are proposed:

- (a) improved electromagnetic analysis of microstrip elements to predict their impedance mutual coupling and radiation characteristics on flat surfaces (B, F, I) and on cylindrical and spherical surfaces (S);
- (b) breadboard experiments on microstrip elements to optimize performances such as VSWR, low feed circuit losses, polarization purity and to improve feed integration on planar surfaces (D, I, UK), on cylindrical and spherical surfaces (S), to investigate designs and manufacturing techniques for operation at higher frequencies (B, F, SF) and to extend use of microstrip elements to space applications (ESA, UK).

Ease and cost of manufacturing will be given due consideration. The findings of this activity will be summarized in a common report divided into two parts: one for 'low' frequencies, the other one for 'high' frequencies.

5.1.2. Low loss beam forming and controlling components and networks (B, D, ESA, F, I, NL, S, SF, UK)

This activity is aimed at improving fixed (transmission line, power splitters, transformers, baluns) and variable (dividers, phase shifters, switches, active devices) components of beam forming and controlling networks and their integration for the same application as for the microstrip elements and in addition adaptive beam forming for reduction of multipath fading.

The following contributions to be coordinated in this activity are proposed:

- (a) Design, development and integration of network components for 'low' (L-band to C-band) frequencies (ESA, D, NL, S)
- (b) Design development and integration of network components for 'high' (X-band to Ka-band) frequencies (B, ESA, F, I, SF, UK)
- (c) Adaption for space use of relevant 'low' frequency (ESA, S) and 'high' frequency (ESA, I) components and networks.

Low losses and manufacturing ease and cost are of prime importance in the above contributions.

The findings of this activity will be summarized in a common report divided into two parts: one for 'low' frequencies, the other one for 'high' frequencies.

5.1.3. Array analysis and synthesis unified software (B, D, ESA, F, I, NL, S, SF, UK)

The aim of this activity is to develop in a coordinated manner a comprehensive software package for array analysis and synthesis from routines to be developed or modified by the Project members following a standard language and format.

The proposed contributions to be coordinated in this activity are the following:

- (a) Modelling of imbedded element radiation patterns, impedance and mutual coupling for planar arrays (B, F, UK) and conformal arrays (S) with experimental validation
- (b) Modelling of array factor for arbitrary spacing and excitations of elements on planar (ESA, UK) or non-planar (S) surfaces
- (c) Development of a routine to determine excitations to produce a given radiation pattern (B)
- (d) Modelling of network impedances to describe element excitations taking into account mutual coupling (UK)
- (e) Development of pattern plotting routines (ESA, UK)
- (f) Specialized contributions to the development of the above routines (all Project members).

The routine, written in Fortran IV, should be easy to adapt to the Project members' different computers.

5.2. *Activities for exchange of technical information*

The following topics are proposed for exchange of technical information to the extent compatible with safeguards in respect of industrial property rights and commercially confidential material.

- (a) Elements for multibeam antenna arrays (D, ESA, S, SF)

- (b) Limited scan antennae for multipath fading reduction (D, NL)
- (c) Multibeam antenna feed arrays (ESA, S)
- (d) Active modules for phased array antennae (ESA, S)
- (e) Adaptive beam forming systems (D, NL, S)
- (f) Frequency scanning reflect arrays (ESA)
- (g) Antenna array measurement techniques (B, ESA, S).

It is proposed that an open symposium on phased array antennae be organized jointly by COST and ESA at ESTEC, Noordwijk, Netherlands, to present results of the COST Project, invite prominent speakers in the field of phased arrays and determine future research objectives and domains.

**Memorandum of Understanding
for the implementation of a European research project on antennae in the 1990s —
electronically steered antennae for future satellite and terrestrial communications
(Cost Project 213)**

Date of entry into force: 31.10.1984

Duration: 30.10.1987

Contracting Parties	Date of signing	Date of entry into force
France	31.10.1984	31.10.1984
Netherlands	31.10.1984	31.10.1984
United Kingdom	31.10.1984	31.10.1984
Switzerland	31.10.1984	31.10.1984
Finland	31.10.1984	31.10.1984
Sweden	31.10.1984	31.10.1984

**Agreement
on the setting up of an
experimental European network
of ocean stations**

(COST 43 bis)

Agreement on the setting up of an experimental European network of ocean stations (COST 43 bis)

The Contracting Parties to this Agreement, hereinafter referred to as 'the Parties', conscious of the need to pursue the coordination of their action with a view to setting up an experimental European network of ocean stations for providing meteorological and oceanographic data,

HAVE AGREED as follows:

Article 1

The Contracting Parties to this Agreement, hereinafter referred to as 'the Parties', shall cooperate in a project, hereinafter referred to as 'the Project', with a view to setting up an experimental European network of ocean stations (ENOS) for providing meteorological and oceanographic data on a real-time basis.

A description of the Project is contained in Annex I.

Article 2

A Management Committee, hereinafter referred to as 'the Committee', composed of one representative of each Party, is hereby established. Each representative may be accompanied by experts or advisers.

The Committee, acting unanimously, shall adopt its rules of procedure. In addition, it shall appoint its Chairman and Vice-Chairman.

At the request of the Parties, the Commission of the European Communities shall provide the Secretariat for the Committee.

At the request of the Parties, the Secretary-General of the Council of the European Communities shall be entrusted with the administration of the costs of coordination.

Article 3

The Committee shall be responsible for coordinating the Project and in particular shall:

(a) make recommendations to the Parties, giving reasons, on any activity relating to the implementation of the property;

(b) follow the progress of the work and recommend to the Parties, where appropriate, such changes as may be necessary in the overall direction or the volume of the work being undertaken;

(c) take any decisions concerning the activities of the sub-regions referred to in Annex I, the coordination of which is necessary to the success of the Project;

(d) appoint the project leader and define his functions;

(e) draw up programme proposals for the possible continuation of the work after this Agreement expires;

(f) exchange research results to an extent compatible with adequate safeguards for the interests of the Parties, their competent public authorities or agencies and research contractors, in respect of industrial property rights and confidential material of a commercial nature;

(g) publish, annually and at the end of the Project, a report containing its conclusions on the results of the operations covered by the Project and forward it to the Parties;

(h) — draw up the financial regulations applicable to the management:

— adopt its budget annually;

— after examination of the annual administrative accounts decide on the discharge to be given to the Secretary-General of the Council of the European Communities entrusted, according to Article 2, with the administration of the costs of coordination;

(i) examine any problem which may arise from the execution of the Project;

- (j) examine any problem relating to the accession to the Agreement, after its entry into force, by the Parties mentioned in Article 8 as well as the conditions for accession.

Article 4

1. The costs of coordination, the total amount of which shall not exceed BF 12 million, shall be divided among the Parties in accordance with a scale based on statistics of the OECD concerning the gross domestic product (GDP) of the Parties for the year 1980. The maximum contributions of all potential Parties calculated on the basis of the aforementioned scale are given in Annex II.

2. The Parties shall each pay their contributions in four annual instalments. The first instalments shall be payable upon the entry into force of the Agreement and at the latest within three months of that date. Subsequent instalments shall be paid on each anniversary of the entry into force or at the latest within three months of these dates.

Parties acceding under the terms of Article 8.4 shall pay their initial contribution on the date of deposit of their instruments of ratification or at the latest within three months of that date. Subsequent instalments shall be payable on the same dates as those due under the terms of this Article or at the latest within three months of these dates.

3. Any delay in the payment of the contribution shall give rise to the payment of interest by the Party concerned at a rate equal to the highest discount rate obtaining in the Parties on the due date. The rate shall be increased by 0.25 of a percentage point for each month of delay. The increased rate shall be applied to the entire period of delay. However, such interest shall be chargeable only if payment is effected more than three months after the issue of a call for funds by the Secretary-General of the Council of the European Communities.

Article 5

1. The Parties shall require their establishments and contractors to notify them, for the information of the Committee, of previous commitments and industrial property rights of which they are aware and which might hinder the performance of the work covered by this Agreement.

2. Without prejudice to the application of national law, each Party shall ensure that the owners (falling within its jurisdiction) of industrial pro-

perty rights and technical information resulting from work assigned to them will be under an obligation, if so requested by another Party, to grant that Party, or a third party nominated by that Party, a licence in respect of those industrial property rights or that technical information and will be under an obligation to supply the technical know-how necessary for use of the licence where the grant of the licence is requested:

(a) for the performance of work covered by this Agreement; or

(b) for setting up ocean stations for the provision of meteorological and oceanographic data.

Such licences shall be granted on fair and reasonable terms having regard to commercial usage.

3. The Parties shall accordingly ensure the inclusion in contracts for work covered by this Agreement of conditions enabling the licences referred to in paragraph 2 to be granted.

4. The Parties shall make every effort, in particular by the inclusion of appropriate conditions in contracts for work covered by this Agreement, to make provision on fair and reasonable terms and having regard to commercial usage for the licences referred to in paragraph 2 to be extended to industrial property rights notified in accordance with paragraph 1 and to prior technical know-how owned or controlled by the contractor, insofar as use of the said licences would not otherwise be possible. Where the contractor is unable to agree to such an extension, the case shall be submitted to the Committee, before the contract is entered into, so that the Committee can state its views on the matter.

5. The Parties shall take any steps necessary to ensure that the fulfilment of the obligations laid down in paragraphs 1 to 4 is not affected by any subsequent transfer of the industrial property rights, technical information or technical know-how. Any transfer of industrial property rights shall be notified to the Committee.

6. If a Party terminates its participation in this Agreement, rights of use which it has granted or is obliged to grant or has obtained in application of paragraphs 2 and 4 and which concern the results of the work carried out up to the date when the said Party terminates its participation, shall continue thereafter, on the conditions laid down in the relevant contract or contracts.

7. The rights and obligations set out in paragraphs 1 to 6 shall continue to apply after this Agreement expires. They shall apply to industrial

property rights as long as these remain in force and to unprotected technical information or technical know-how until such time as they pass into the public domain other than through disclosure by the licensee.

Article 6

The Parties shall apply the provisions of Annex III on the legal status of Ocean Data Acquisition Systems (ODAS).

The Annexes to Annex III may be subject to review independently of the Articles on the legal status of ODAS.

Article 7

The Parties shall consult each other:

- (i) at the request of one of them, on any problems posed by the implementation of this Agreement;
- (i) in the event of withdrawal by one of them, on the continuance of the Project.

Article 8

1. This Agreement shall be open for signature by the States and by the European Communities which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971, and by the Republic of Iceland until it enters into force in accordance with paragraph 3. Any of the foregoing which does not sign this Agreement within the said period may accede to it subject to the unanimous consent of the Committee which may impose conditions therefore. Instruments of accession shall be deposited with the Secretary-General of the Council of the European Communities. The Agreement shall enter into force for the acceding party on the date of deposit of such instrument.

2. This Agreement shall be subject to ratification or acceptance by the Signatories. Instruments of ratification or acceptance shall be deposited with the Secretary-General of the Council of the European Communities.

3. This Agreement shall enter into force on the first day of the second month after the date on which seven of the Signatories have deposited their instruments of ratification.

4. For Signatories whose instruments of ratification or acceptance are deposited subsequent to the entry into force of this Agreement, it shall enter into force on the date of the deposit of such instrument or acceptance.

5. Signatories which have not deposited their instruments of ratification or acceptance at the time of the entry into force of this Agreement may take part in the work of the Committee without voting rights for a period of six months after the date of entry into force.

6. The Secretary-General of the Council of the European Communities shall notify all Signatories and acceding States of the date of the deposit of instruments of ratification, acceptance or accession to this Agreement and the date of its entry into force and shall forward all other notices which he has received under the Agreement.

Article 9

Any Party may give notice of its withdrawal from the Agreement two years after its entry into force by written notification to the Secretary-General of the Council of the European Communities. Such withdrawal shall take effect one year from the date of the receipt by the Secretary-General of the Council of the European Communities of this notification.

Article 10

This Agreement shall remain in force for four years. If the Project is not completed within that time the Parties may agree to prolong it in order to complete the Project.

Article 11

This Agreement, of which the French and English texts are equally authentic, shall be deposited with the General Secretariat of the Council of the European Communities, which shall transmit a certified copy to each of the Parties.

Done at Brussels on the twenty-first day of November in the year one thousand nine hundred and eighty-three.

Description of the Project

I. Introduction

1.1. *The Project*

The aim of this extension of COST Project 43 is to complete Phase II of the original project plan which was to set up an experimental European network of ocean stations (ENOS) and, taking into account the interest shown by the users, form an opinion on the extent and progress of the integration of the experimental network into an operational and standardized network covering the whole of the European region.

At the same time the experimental work on evaluation, testing and further development of existing components such as sensors, structures and transmission systems carried out under Phase I of the Project will be continued wherever possible.

1.2. *General considerations*

The thermodynamic processes in the ocean and the atmosphere above it are closely inter-dependent. Meteorological observations made at sea therefore must include data from the upper ocean and oceanographic observations must include data from the lower atmosphere.

The ocean and the atmosphere are both subject to continuous variation in space and time. A detailed and continuous supply of data is therefore necessary to monitor maritime environmental conditions. Meteorological and related oceanographic predictions are now based largely upon the integration of large and complex numerical models which are often strongly dependent for their outcome on the quality of the initial observational data from which the integration proceeds. The specification of the boundary conditions associated with the numerical models of both meteorology and oceanography also requires observations of adequate spatial and temporal frequency. Other scientific activities which benefit from these data would be the verification of predictions (hind casting) and the subsequent further development of the models, and the provision of ground truth data against which to evaluate remotely sensed measurements such as those obtained from satellites.

A relatively dense net of meteorological stations already covers the European continent but the ocean is not adequately covered. Ocean weather ships-stations occupy selected positions but they are inadequate in number and under threat of withdrawal for financial reasons.

Ocean data acquisition systems (ODAS) are suggested as a contribution which could partially fill this oceanic gap in the meteorological observing station network.

Most ocean phenomena, except those directly related to tidal forces, are very variable. For this reason a reliable and sufficiently detailed prediction of ocean phenomena cannot be worked out on the basis of the statistical analysis of old time-series.

At the same time there is an increasing demand for ocean data, particularly as regards ever-increasing offshore activity. The optimum utilization of the ocean food resources also demands close monitoring of ocean conditions such as the temperature, currents, oxygen and the nutrient content. Furthermore, pollution in the ocean is becoming a vital problem which calls for continual surveillance, not only to detect the pollutants, but also to ascertain the diffusion parameters, that is, wind, currents, state of sea, etc.

It should also be emphasized that a better knowledge of the physical processes of the ocean and the atmosphere — achieved presumably by a denser and improved ocean station network — will increase the safety of human life and property. The proposed Pro-

ject is very comprehensive. Its mere size and complexity make it prohibitive for a single nation to undertake, not only for financial reasons, but also for reasons such as data acquisition from waters of foreign nations, deployment and recovery, data transmission, etc.

In order to serve its purpose, the ENOS must cover an area so large that most European countries will benefit directly from the results. It consequently calls for a common European effort to provide the data. It has been stated in connection with the product of ENOS, namely the data, that its special value lies in its real-time availability for forecasting purposes and other immediate uses. It should be emphasized that its forecasting value rapidly deteriorates in time, as does the forecast itself.

It is therefore to be concluded that the data will be used for the following purposes:

- (i) forecasting of ocean and atmospheric phenomena;
- (ii) establishment of climatological statistics;
- (iii) scientific studies on oceanic and atmospheric phenomena.

Whilst real-time data is imperative for forecasting, it is normally not required for the establishment of standards or for scientific studies.

As to scientific application, it should be mentioned that this project is a general system of data acquisition, whilst a scientific project is normally structured to provide data for studies of particular phenomena, where care is taken to avoid irrelevant information.

For obvious reasons scientific projects often depend on very specific sensors and equipment which have been built for a particular purpose and are in no way standardized or suited to a general system.

Statistical data form the background for the planning of a large variety of permanent and mobile marine constructions, such as docks, quays, moles, ships, oil rigs, etc.

Furthermore, statistical analysis on currents, tides, etc. are given as an aid to navigators in pilot books and charts.

II. Objectives

The meteorological and oceanographic real-time data as provided by this Project are of great interest to a number of specific groups of users who need this information to achieve a better knowledge and a closer monitoring of the marine environment in order to:

- (a) improve safety and protection of human life and property;
- (b) improve the exploitation of marine resources;
- (c) improve the economy of marine activity.

The potential users are:

- (a) weather forecasting services;
- (b) storm surge and warning services;
- (c) coastal protection bodies;
- (d) offshore oil-gas and mineral exploration and exploitation firms;
- (e) ship-routeing services and navigators;

- (f) the fishing industry;
- (g) environment protection agencies;
- (h) marine research institutions;
- (i) ice forecasting services;
- (j) marine constructors and shipbuilders.

The priority will obviously vary depending on the locality and the national interest. A brief survey of some of the topics and their practical importance to various users is given below.

Weather forecasting has proved its value and is a self-evident requirement in a modern community. The users cover more or less the whole community, especially ship and aircraft navigators, fishermen and farmers. However, additional information from offshore positions is required in addition to the network already in existence, if the reliability and resolution of the forecasts are to be improved.

Storm surges, flood warnings. Due to coinciding effect of tides, wind storms, air pressure and low frequency waves, the sea level can rise to extremely high levels. The results can have enormous consequences on those countries which are vulnerable to flooding. Early warning and close monitoring, based on adequate offshore information is therefore of vital importance.

Ocean forecasting. Prognostic oceanography or prediction of ocean conditions of e.g. waves, state of sea, temperature, currents, contents of nutrients etc., in a form similar to a weather forecast, is probably still a long way ahead, because the dynamics of the ocean are not well enough understood and the information available is inadequate for the purpose. Nevertheless, a pilot project on synoptic oceanography was carried out under the auspices of the ICES¹ in the late sixties. The result of this pilot project was highly prized. However, the facilities were inadequate to maintain and develop the project which was considered premature at that time. Like weather forecasting, ocean forecasting is assumed to be an important source of information where offshore projects, coastal engineering, shipping and fisheries, are concerned.

Coastal and ocean engineering. The offshore activity relating to exploitation of the seabed obviously depends greatly on local weather conditions. Unfavourable and unexpected weather and sea conditions — during a critical operational phase — may be disastrous. In this connection it is assumed that, for some operational purposes the user will need to receive the relevant data at his own operations centre, in real-time, in addition to the standard forecast. Such information is therefore considered of special value where coastal and offshore construction operations, deployment of pipelines, cables, etc, are concerned.

Ship routing. Estimation of the most favourable sailing route between two points at a given date, based on weather forecasting and knowledge of the state of the sea and currents, has proved its value. This method saves sailing time, lessens damage and danger to ships and cargo and gives greater passenger comfort and safety.

Fishing. Rational and optimum exploitation of maritime food resources requires adequate information on ambient water conditions such as temperature, salinity, currents, oxygen and nutrient content, because life in the ocean is closely inter-dependent and linked to those parameters. Ocean forecasting is therefore considered an important tool for improving fishery research and, eventually, for obtaining maximum yields of fish.

¹ International Council for the Exploration of the Sea.

Navigation. Ship-routing has been mentioned. In addition, ocean forecasting and real-time data will prove a valuable aid in the handling of large ships, oil carriers, platforms, etc., in narrow and shallow waters. The existing charts and pilot logs are based on statistics which are often insufficiently accurate in relation to actual conditions. The large ships of today develop less engine power per ton than the smaller ships, and consequently are more susceptible to the effects of wind and currents.

Monitoring of pollutants. Pollution is a problem of increasing impact to the marine environment. Key parameters are the detection and monitoring of the diffusion rates and the movement of pollutants from place to place. In this connection an ODAS network can play an important role by acting as a means of monitoring, providing immediate information on the presence of polluting elements, together with those factors responsible for all aspects of their movements from place to place, i.e. wind, currents and waves.

At present there are no adequate automatic sensors for detecting pollutants on the market. However, great efforts are being made in this direction and it is believed that the first prototype sensors will appear on the ODAS in the near future.

III. Technical content

3.1. Structure of the programme

The programme includes:

- (a) sub-system development;
- (b) implementation of a network;
- (c) data exploitation and their integration into the WMO/IOC¹ network.

3.2. Description of the regions

During the early stages of Phase II of the Project, of which this extension forms the second part, the five regional networks which comprised the original pilot project were merged into two larger regions. These are:

- A. The northern region, comprised of the Baltic Sea, the Norwegian Sea, the North Sea, the Irish Sea, the English Channel and the North-Eastern Atlantic east of the 35°W meridian and north of the 50°N parallel.
- B. The southern region, comprised of the Atlantic east of 35°W and bounded by the 27°N parallel and the 50°N parallel together with that portion of the Mediterranean Sea west of the 12° east meridian.

These limits are in no way absolute, but are chosen as a convenient definition which may be adjusted if so required.

3.3. Scope of coordination

The coordination will include:

- Coordination of data;
- Compatibility of data;
- Collection of data;
- Data format;
- Dissemination of data;
- Coordination of technical topics including joint ODAS programmes;

¹ World Meteorological Organization/Intergovernmental Oceanographic Commission.

Calibration/Intercalibration of sensors;
Registration of ODAS;
Deployment and recovery of ODAS;
Testing of ODAS.

3.4. Calibration/intercalibration

The national programmes on which this Project is based cover a variety of ODAS regarding design and size. Although most of them are well designed and serve their purpose well, the data, from the various ODAS are, unfortunately, not compatible. Compatibility of the data is a paramount demand for this Project.

Sensors showing reliable and unambiguous results in the laboratory may appear to diverge seriously when exposed to the open rough sea. Furthermore, quite obviously the calibration of the sensors depends, to a certain extent, on the platform on which they are mounted.

Institutions taking part in the Project will cooperate wherever possible in joint calibration/intercalibration work. The comparison of sensors against standard references in the laboratory and the adjacent deployment of different types of ODAS both in sheltered and open waters will be aimed for.

3.5. Deployment, service and recovery of ODAS

A substantial part of the expenses involved in the execution of this Project goes to provide ships with deployment, service and recovery of ODAS. It is then proposed that the use of the ship's time can be optimized in connection with deployment and regular servicing by mutual arrangement between the participating laboratories. However, in the case of emergencies such as lost or drifting ODAS, all participating countries are encouraged to give priority to the recovery of ODAS, providing this can be done without seriously interfering with other programmes.

In order to increase the benefit of the network by ensuring the best possible coverage of ODAS, the participating countries which are not capable of deploying ODAS within the waters under their jurisdiction, should encourage other nations to do so.

3.6. Data transmission

The data will be transmitted by means of various transmission systems, from ODAS to shore stations, which will re-transmit them to a central station. Subject to the satisfactory proving of the accuracy of the system, the central station(s) will disseminate the data according to the standard format of the WMO to the various national centres who, in turn, will provide the users with the data.

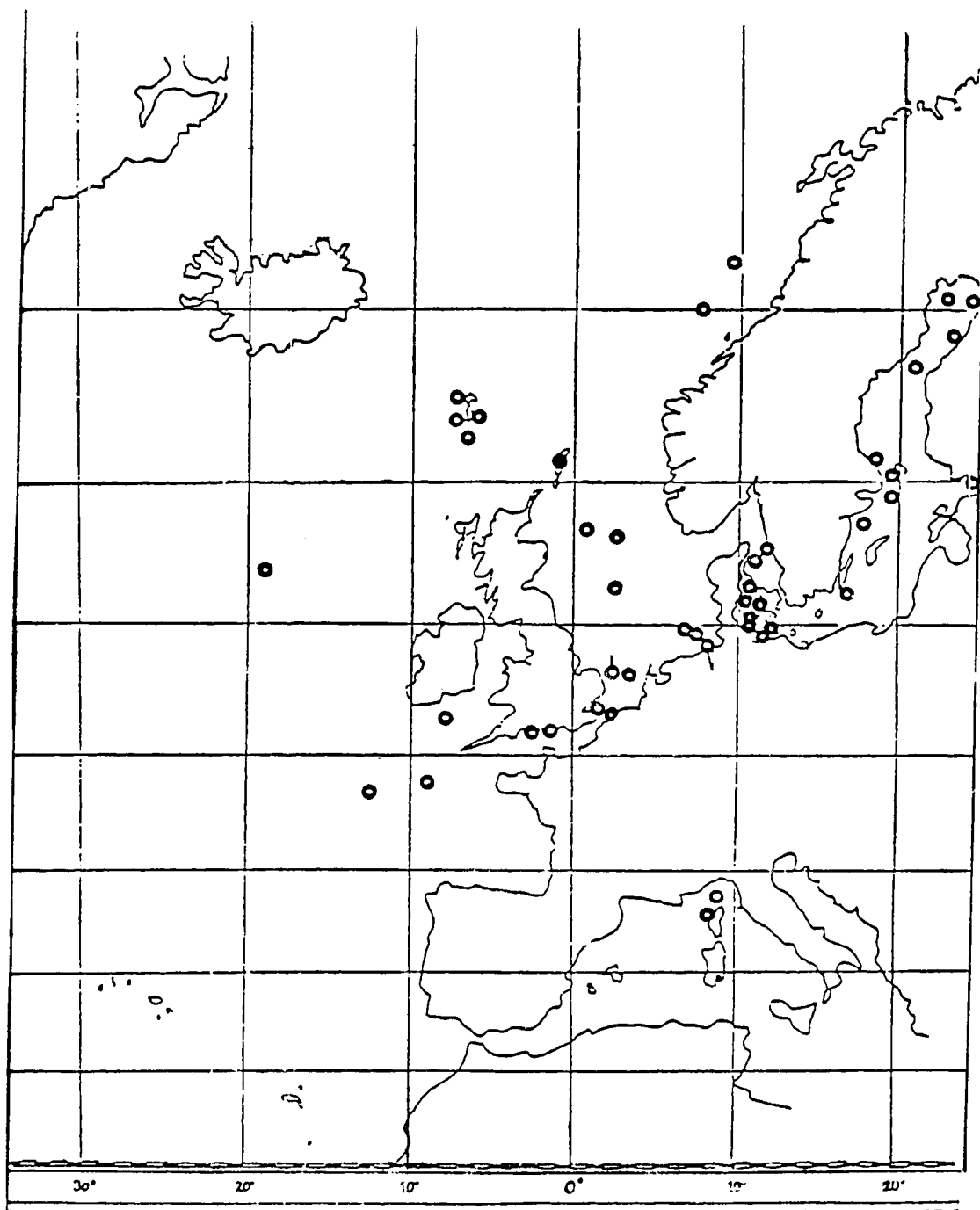
IV. The pilot network

The ODAS implemented by the halfway stage of the period of the original COST 43 Agreement are shown in map 1. Not all these stations have operated simultaneously and continuously but all have contributed to the data made available by the Project. They have been supplemented by a series of drifting buoys of limited life which were deployed around the Azores and by experimental deployments of moored buoys in the Faeroe-Shetland gap. It is important to maintain this network for long enough to obtain sufficient data to permit a proper evaluation of its worth. It is also important to encourage the cooperation necessary to establish further experimental open-ocean ODAS especially in the West of the COST 43 region. The ODAS contributions are listed by nation in the COST 43 ODAS inventory.

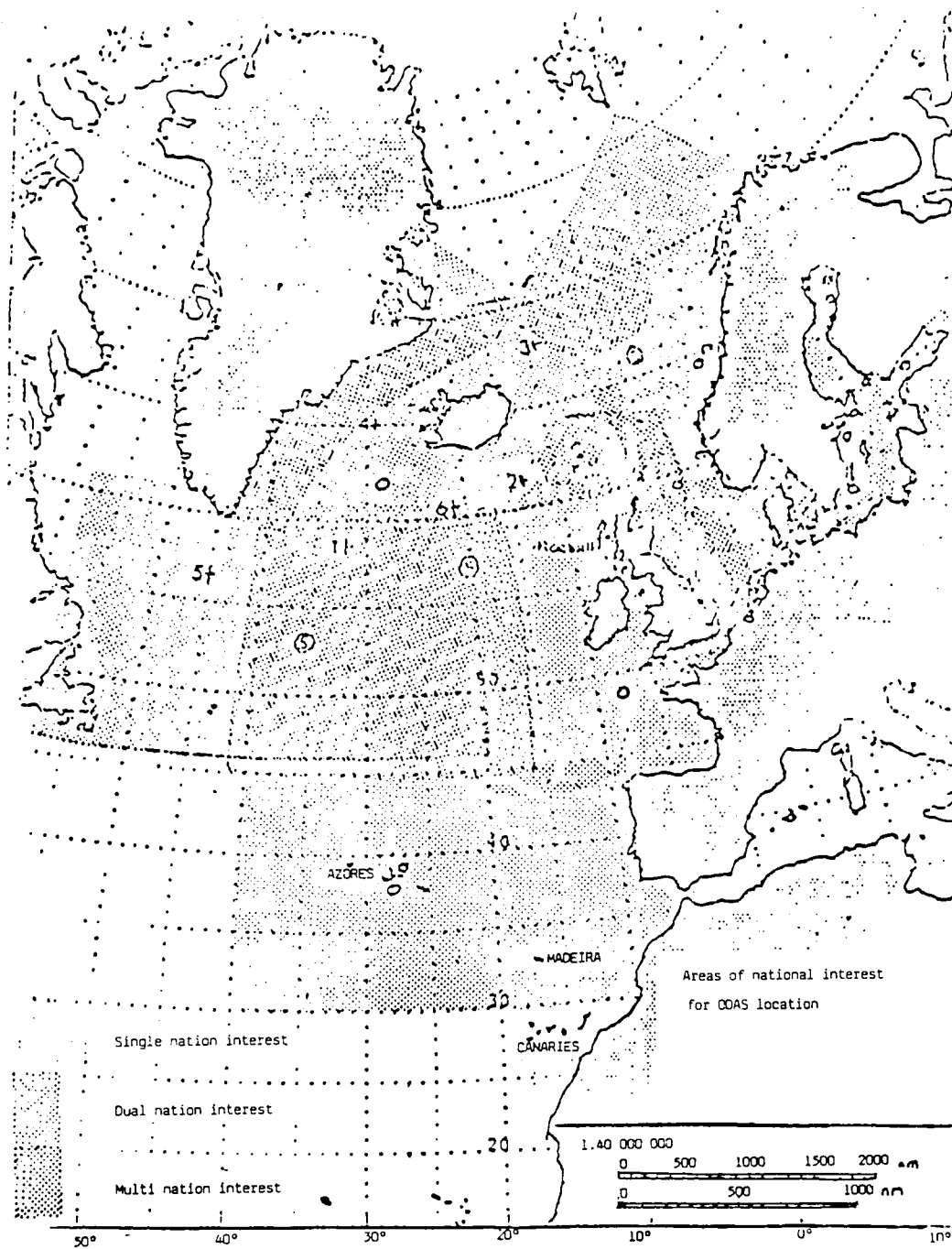
The further cooperation under the terms of the revised Agreement of which this document is an Annex, will be in the form of unilateral, bilateral and multilateral actions by Member States on an opportunity basis. Contributing nations have indicated areas of the COST 43 region in which they have a special interest and these are shown on map 2. Where these areas overlap there is clearly a degree of common interest and through the mechanisms of the COST 43 sub-groups for the North and South regions, COST 43 will encourage mutual cooperation between member nations with a view to establishing further experimental ODAS.

All contributing nations will seek slowly to increase the emphasis upon the operational aspects of ODAS deployment in preparation for the gradual implementation of an operational ODAS network which was Phase III of the original Project and remains an aim of this continuation of the work.

Special emphasis will be placed by COST 43 upon an evaluation of the experimental network and Phase II of the Project will end with the production of a report in which the results of Phase I and II will be assessed, conclusions drawn and recommendations made for the implementation of an operational network.



COST 43 ODAS NETWORK AS AT 30 JUNE 1980
Drifting buoys have not been included.



ANNEX II

The following table shows the contributions of all possible parties calculated on the basis referred to in Article 4, if all those parties will actually participate in the Project.

STATES	4 years	p.a.
1. Belgium	695 050	173 760
2. Denmark	396 095	99 025
3. Spain	1 259 720	314 930
4. Finland	297 760	74 440
5. France	3 889 845	972 460
6. Ireland	106 215	26 555
7. Iceland	17 065	4 265
8. Norway	341 855	85 465
9. Netherlands	1 000 270	250 070
10. Portugal	143 690	35 920
11. United Kingdom	3 119 970	779 995
12. Sweden	732 465	183 115
Total	12 000 000	3 000 000

ANNEX III

Legal status of Ocean Data Acquisition Systems (ODAS)

Unchanged text of current Agreement Document COST/288/79.

**Agreement
on the setting up of an
experimental European network
of ocean stations
(COST 43 bis)**

Date of entry into force: 1.12.1984

Duration: 30.11.1988

Contracting Parties	Date of signing	Date of entry into force
Belgium	21.11.1983	1.12.1984
Denmark	21.11.1983	1.12.1984
France	15.12.1983	20. 8.1985
Netherlands	21.11.1983	1.12.1984
United Kingdom	21.11.1983	1.12.1984
Ireland	Adhésion	19. 4.1985
Spain	1. 3.1984	12. 9.1985
Norway	21.11.1983	1.12.1984
Portugal	3. 4.1984	¹
Finland	21.11.1983	1.12.1984
Sweden	21.11.1983	1.12.1984
Iceland	16.12.1983	21. 3.1985

¹ At the date of publication of this volume, Spain and Portugal had not ratified this Agreement.

**Memorandum of Understanding
for the implementation of a European research project
on a data system for the study of demand for
interregional passenger transport**

(COST Project 305)

Memorandum of Understanding
for the implementation of a European research project
on a data system for the study of demand for
interregional passenger transport
(COST Project 305)

The Signatories to this Memorandum of Understanding, declaring their common intention to take part in a European research project on a data system for the study of demand for interregional passenger transport, have reached the following understandings:

Section 1

1. The Signatories intend to cooperate in a project to promote research into the establishment of a data system for the study of demand for interregional passenger transport (hereinafter referred to as the 'Project').

2. The main objective of the Project is to establish data collection methods which meet the requirements for the study of interregional passenger transport, thereby obtaining improved scientific analysis in the field of transport strategy at European level.

3. The Signatories hereby declare their intention of carrying out the Project jointly, in accordance with the general description given in Annex II, adhering as far as possible to a timetable to be decided by the Management Committee referred to in Annex I.

4. The Project will be carried out through concerted action, in accordance with the provisions of Annex I.

5. The overall cost of the activities of the Signatories under the Project is estimated at approximately 400 000 ECU at 1983 prices.

6. The Signatories will make every effort to ensure that the necessary funds are made available under their internal financing procedures.

Section 2

1. Signatories intend to take part in the Project in one or several of the following ways:

(a) by carrying out studies and research in their technical services or public research establishments (hereinafter referred to as 'public research establishments');

(b) by concluding contracts for studies and research with organizations (hereinafter referred to as 'research contractors');

(c) by providing the Secretariat, including facilities and expertise required, and other coordinating services or activities necessary for the aims of the Project to be achieved.

2. In order to ensure efficient management of the Project, in particular with regard to the evaluation of research proposals, the coordination of work, the evaluation of results and the drawing up of the final report, the Signatories intend to place the necessary experts for a limited time at the disposal of the Management Committee referred to in Annex I.

3. The Signatories intend to promote inter-laboratory visits.

Section 3

1. This Memorandum of Understanding will take effect for three years upon signature by at least three Signatories.

2. This Memorandum of Understanding may be amended in writing at any time by arrangement between the Signatories.

3. A Signatory which intends, for any reason whatsoever, to terminate its participation in the Project will notify the Secretary-General of the Council of the European Communities of its intention as soon as possible, preferably not later than three months beforehand.

4. If at any time the number of Signatories falls below three, the Management Committee referred to in Annex I will examine the situation which has arisen and will consider whether or not this Memorandum of Understanding should be terminated by decision of the Signatories.

Section 4

1. This Memorandum of Understanding will, for a period of six months from the date of the first signing, remain open for signing by the governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and also by the European Communities. The governments referred to in the first subparagraph and the European Communities may take part in the Project on a provisional basis during the above mentioned period, even though they may not have signed this Memorandum of Understanding.

2. After this period of six months has elapsed, applications to sign this Memorandum of Understanding from the governments referred to in paragraph 1 or from the European Communities will

be decided upon by the Management Committee referred to in Annex I, which may attach special conditions thereto.

3. Any signatory may designate one or more competent public authorities or bodies to act on its behalf, in respect of the implementation of the Project.

Section 5

This Memorandum of Understanding is of an exclusively recommendatory nature. It will not create any binding legal effect in public international law.

Section 6

1. The Secretary-General of the Council of the European Communities will inform all Signatories of the signing dates and of the date of entry into effect of this Memorandum of Understanding and will forward to them all notices which he has received under this Memorandum of Understanding.

2. This Memorandum of Understanding will be deposited with the General Secretariat of the Council of the European Communities. The Secretary-General will forward a certified copy to each of the Signatories.

Done at Brussels on the twenty-seventh day of February in the year one thousand nine hundred and eighty-four.

ANNEX I

Coordination of the Project

1. A Management Committee (hereinafter referred to as 'the Committee') will be set up, composed of not more than two representatives for each Signatory. Each representative may be accompanied by such experts or advisers as he or she may need.

The governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and the European Communities may, in accordance with the second paragraph of Section 4 point 1 of the Memorandum of Understanding, participate in the work of the Committee before becoming Signatories to the Memorandum without, however, having the right to vote.

When the European Communities are not a Signatory to this Memorandum of Understanding, a representative of the Commission of the European Communities may participate in the work of the Committee as an observer.

2. The Committee will be responsible for coordinating the Project and, in particular, for making the necessary arrangements for:

- (a) the choice of research topics on the basis of those provided for in Annex II, including any modifications submitted to Signatories by the competent public authorities or bodies; any proposed changes to the Project framework will be referred for an opinion to the COST Technical Committee on Transport;
- (b) advising on the direction which work should take;
- (c) drawing up detailed plans and defining methods for the different phases of execution of the Project;
- (d) coordinating the contributions referred to in Section 2(1)(c) of the Memorandum of Understanding;
- (e) keeping abreast of the research being done in the territory of the Signatories and in other countries;
- (f) exchanging research results among the Signatories to the extent compatible with adequate safeguards for the interests of Signatories, their competent public authorities or bodies and research contractors in respect of industrial property rights and commercially confidential material;
- (g) drawing up the annual interim reports and the final report to be submitted to the Signatories and circulated as appropriate;
- (h) dealing with any problem that may arise out of the execution of the Project, including those relating to possible special conditions to be attached to accession to the Memorandum of Understanding in the case of applications submitted more than six months after the date of the first signing.

3. The Committee will establish its rules of procedure.

4. The Secretariat of the Committee will be provided at the invitation of the Signatories by either the Commission of the European Communities or one of the Signatory States.

Technical Annex

I. General introduction

In 1979 seven research institutes¹ in Europe agreed that it was time to join forces and to work out more detailed estimates of the likely demand for interregional passenger transport services, as a follow-up to COST Project 33 (i.e. to the forward study on European inter-urban passenger transport requirements). In July 1981 their findings were published in a report (COST/252/81) which stresses the need for regular, comparable and harmonized data for international purposes.

This progress prompted several of the countries taking part to call for cooperation at government level — and no longer just between the institutes directly concerned — with a view to embarking on a new phase of research which would ultimately establish an improved data system for the study of transport demand.

II. Objectives

What modifications and additions must be made to the existing data collection system so that it can meet the needs of data users concerned with interregional passenger transport in Europe? This is the question which COST Project 305 must answer. Research in the various countries involved has determined the data requirements, which must first be accurately defined before the data compilation methods are examined.

III. Programme

The Project could be organized in the following way to achieve this objective:

First phase:

to determine and to classify in order of importance the main national and international objectives of the socio-economic research into interregional passenger transport. Once the exact scope of the term 'interregional' has been defined (in terms of a specific minimum distance, perhaps omitting journeys of certain types or made for certain reasons), efforts will turn towards identifying the various avenues of research which are to be explored in varying degrees of depth and therefore require separate sets of data.

In this phase one could draw on, *inter alia*, the report prepared by the group on co-operation between national transport research bodies (COST/252/81) which discusses a number of research requirements in the estimation of transport demand — and the paper prepared by the Dutch delegation (COST 305/1/82) — which looks at one recent area of concern in the transport field.

¹ The seven institutes were:

DFVLR (Federal Republic of Germany)
IRT (France)
Centro Studi sui sistemi di trasporto (Italy)
NVI (Netherlands)
TRRL (United Kingdom)
Royal Institute of Technology (Sweden)
École Polytechnique de Lausanne (Switzerland)

Second phase:

to define the basic data required for the research work found to be necessary in the first phase and to classify the requirements which the data must satisfy; the following requirements spring to mind immediately:

- (a) the need to select a representative population, geographical area or survey period;
- (b) the need for homogeneous chronological series of sufficient length;
- (c) the need to ensure that the data for each country, mode of transport, etc. are comparable;
- (d) needs regarding the precise nature of the data (factual data on traffic flows or mobility, or data concerning behaviour, attitudes, opinions, etc.);
- (e) needs as regards the reliability and accuracy of the data.

This list is not exhaustive.

Third phase:

to assess the present data collection system and to estimate how far the results obtained satisfy the standard requirements defined in the second phase (the term 'system' covers all data collection within Europe, whether regular or occasional, national or international).

Although this concerted project does not set out to deal with the problems of data collection and validation in detail, it will probably pay some attention to the inherent constraints on these systems, in so far as they determine the extent to which the collection methods in question can be adapted or extended. These constraints are sometimes purely technical though they are sometimes caused by institutional, financial or commercial factors.

Fourth phase:

to draw up a report for those responsible for data collection, making a number of practical proposals to ensure a closer match between the data available and the research requirements.

A distinction must be drawn between:

- (i) Adjustments which are both feasible and desirable in the light of the priority research requirements; the adjustments proposed may be measures to ensure greater coordination and harmonization of data (particularly at international level) or to extend the scope or frequency of collection;
- (ii) Collection of new items of data or new methods of collecting conventional items which could supply a large number of research projects in different countries or international organizations but whose suitability for systematic implementation needs to be examined;
- (iii) Collection of specific data for particular types of study or research but for which a number of recommendations must be formulated, as regards the methods to be employed.

IV. Division of labour and costs

This will be a concerted COST Project, i.e. it will take the form of national activities co-ordinated at Community level. It will not be jointly funded; the only role played by the Commission of the European Communities will be to provide administrative assistance.

In the first two phases the work will be conducted initially at national level and then co-ordinated at international level.

The next two phases, particularly the fourth phase, will be mainly international (evaluation, reporting, recommendations).

These features in turn determine how the project is organized:

- (a) a Management Committee consisting of representatives of the participating States involved in the project along with whichever experts they wish to consult will be responsible for running the project;
- (b) national contacts (individuals or organizations working in the field in question) will be responsible for gathering all the national information required for the Project;
- (c) in cases where the needs justify it: a group of experts in which the national contacts will be represented will analyse and report on the information collected by the contacts. In the third and fourth phases in particular, this group will perhaps be split up into specialized sub-groups depending on the nature of the questions to be dealt with. These experts should be chosen from among data users rather than from those responsible for data collection, although of course this does not mean that the national contacts or even the group itself are not to consult the data collectors when necessary.

V. Work by other international bodies

The Management Committee will take all necessary steps to take account of the work undertaken by other international bodies. For instance, it might invite experts from those bodies to some of its meetings.

VI. Duration of the project

The Project will last a total of three years, as follows:

Phase 1: 8 months
Phase 2: 8 months
Phase 3: 12 months
Phase 4: 8 months.

VII. Total costs

The estimated total cost of all the national efforts incorporated in this Project is approximately 400 000 ECU (in the case of eight participating countries).

**Memorandum of Understanding
for the implementation of a European research project
on a data system for the study of demand for
interregional passenger transport
(COST Project 305)**

Date of entry into force: 27.2.1984

Duration: 26.2.1987

Contracting Parties	Date of signing	Date of entry into force
EC	27. 2.1984	27. 2.1984
Germany (FR of)	27. 2.1984	27. 2.1984
France	27. 2.1984	27. 2.1984
Netherlands	20.12.1984	20.12.1984
Switzerland	29. 3.1984	29. 3.1984
Finland	13. 4.1984	13. 4.1984
Sweden	27. 2.1984	27. 2.1984

Agreement
extending and amending the Cooperation Agreement
between the European Economic Community
and the Kingdom of Sweden on a European research
and development programme in the field of
the recycling of urban and industrial waste ¹
(Recycling)

¹ OJ L 360, 23.12.1983.

Agreement
extending and amending the Cooperation Agreement
between the European Economic Community and the
Kingdom of Sweden on a European research and
development programme in the field of the recycling of
urban and industrial
waste
(Recycling)

THE EUROPEAN ECONOMIC COMMUNITY, hereinafter referred to as 'the Community',

of the one part, and

THE GOVERNMENT OF THE KINGDOM OF SWEDEN, hereinafter referred to as 'Sweden',

of the other part,

WHEREAS the Cooperation Agreement between the Community and Sweden on a European research and development programme in the field of the recycling of urban and industrial waste, hereinafter referred to as 'the Agreement', signed on 16 June 1982, will expire on 31 October 1983;

WHEREAS, by its Decision of 17 May 1982, the Council of the European Communities adopted a research and development programme (1982 to 1985) in the raw materials sector, which included the ongoing Community programme in the field of the recycling of urban and industrial waste;

WHEREAS, by its Decision of 12 December 1983, amending its Decision of 17 May 1982, the Council of the European Communities decided to continue the last mentioned programme as part of the sub-programme 'Recycling of non-ferrous and urban and industrial waste' of the programme concerning the raw materials sector;

WHEREAS the Community and Sweden expect to derive mutual benefit from a continuation of the research and development work carried out under the Agreement;

WHEREAS the Agreement necessitates supplementary contributions from the Contracting Parties,

HAVE AGREED AS FOLLOWS:

Article 1

This Agreement shall be extended for the period 1 November 1983 to 31 December 1985.

Article 2

The Appendix to Annex C to the Agreement shall be replaced by the Appendix attached to this Agreement.

Article 3

The estimated maximum financial contribution by the Contracting Parties to the implementation of the European programme for the period 1 November 1983 to 31 December 1985 shall be 2 605 000 ECU to be divided as follows:

- (a) 2 500 000 ECU from the Community,
- (b) 105 000 ECU from Sweden.

The ECU is defined in the Financial Regulation applicable to the general budget of the European Communities and in the financial provisions adopted pursuant to that Regulation.

Article 4

1. This Agreement shall enter into force on 1 November 1983.
2. It shall apply, on the one hand, to the territories in which the Treaty establishing the European Economic Community is applied and under the

conditions laid down in that Treaty and, on the other hand, to the territory of the Kingdom of Sweden.

Article 5

This Agreement, drawn up in a single original in the Danish, Dutch, English, French, German, Greek and Italian languages, each text being equally authentic, shall be deposited in the archives of the General Secretariat of the Council of the European Communities, which shall transmit a certified copy to each of the Contracting Parties.

Done at Brussels on the twenty-ninth day of February in the year one thousand nine hundred and eighty-four.

APPENDIX

	1982		1983		1984		1985		1986		Total	
	CA	PA	CA	PA	CA	PA	CA	PA	CA	PA	CA	PA
I. Initial estimate of overall requirements:												
(a) staff	—	—	—	—	162 650	162 650	174 000	174 000	—	—	336 650	336 650
(b) administrative operating expenditure	48 600	48 600	59 300	59 300	62 000	62 000	66 000	66 000	—	—	235 900	235 900
(c) contracts	1 050 400	344 400	2 640 700	660 700	2 085 350	2 055 350	151 000	1 960 000	—	907 000	5 927 450	5 927 450
Total	1 099 000	393 000	2 700 000	720 000	2 310 000	2 280 000	391 000	2 200 000	—	907 000	6 500 000	6 500 000
II. Revised estimate of expenditure taking into account additional requirements arising from the accession of Sweden:												
(a) staff	—	—	—	—	162 650	162 650	174 000	174 000	—	—	336 650	336 650
(b) administrative operating expenditure	48 600	48 600	59 300	59 300	62 000	62 000	66 000	66 000	—	—	235 900	235 900
(c) contracts	1 050 400	344 400	2 640 700	660 700	2 145 350	2 115 350	196 000	2 005 000	—	907 000	6 032 450	6 032 450
New Total	1 099 000	393 000	2 700 000	720 000	2 370 000	2 340 000	436 000	2 245 000	—	907 000	6 605 000	6 605 000
III. Difference between (1) and (2) to be covered by contribution from Sweden	—	—	—	—	60 000	60 000	45 000	45 000	—	—	105 000	105 000 ¹

CA = commitment appropriations.

PA = payment appropriations.

¹ Contribution from Sweden is calculated on the basis of 2 500 000 ECU for the EEC contribution to topics 4 to 7 of the programme.

Council Decision
of 16 December 1983
on the conclusion of the Agreement extending and amending
the Cooperation Agreement between the European Economic Community
and the Kingdom of Sweden on a European research
and development programme in the field of the
recycling of urban and industrial waste

(83/647/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

HAVING regard to the Treaty establishing the European Economic Community,

HAVING regard to Council Decision 82/402/EEC of 17 May 1982 adopting a research and development programme (1982 to 1985) in the raw materials sector ¹, as amended by Decision 83/634/EEC ² and in particular Article 7 thereof,

HAVING regard to Council Decision 82/403/EEC of 25 May 1982 on the conclusion of a Cooperation Agreement between the European Economic Community and the Kingdom of Sweden on a European research and development programme in the field of the recycling of urban and industrial waste ³,

HAVING regard to the draft Decision submitted by the Commission,

WHEREAS, in accordance with Article 7 (2) of Decision 82/402/EEC, the Commission has negotiated an Agreement with Sweden amending and extending the above mentioned Cooperation Agreement; whereas that Agreement should be approved,

HAS DECIDED AS FOLLOWS:

Article 1

The Agreement extending and amending the Cooperation Agreement between the European Economic Community and the Kingdom of Sweden on a European research and development programme in the field of the recycling of urban and industrial waste is hereby approved on behalf of the Community.

The text of the Agreement is attached to this Decision.

Article 2

The President of the Council is hereby authorized to designate the persons empowered to sign the Agreement in order to bind the Community,

Done at Brussels, 16 December 1983.

For the Council

The President

A. Tritsis

¹ OJ L 174, 21. 6. 1982.

² OJ L 357, 21. 12. 1983.

³ OJ L 174, 21. 6. 1982.

**Agreement extending and amending the Cooperation Agreement between the
European Economic Community and the Kingdom of Sweden
on a European research and development programme in the field
of the recycling of urban and industrial waste
(Recycling)**

Decision of Community programmes: 12.12.1983

Date of entry into force: 1.11.1983

Duration: 31.12.1985

Contracting Parties	Date of signing	Date of entry into force
EC	29.2.1984	1.11.1983
Sweden	29.2.1984	1.11.1983

**Memorandum of Understanding
for the implementation of a
European research project
on wideband digital local telecommunication networks
(COST Project 202 bis)**

Memorandum of Understanding for the implementation of a European research project on wideband digital local telecommunication networks (COST Project 202 bis)

The Signatories to this Memorandum of Understanding, declaring their common intention to take part in a European research project on wideband digital local telecommunication networks have reached the following understandings:

Section 1

1. The Signatories intend to cooperate in a project to promote research into wideband digital local telecommunication networks (hereinafter referred to as the 'Project').

2. The main objective of the Project is to co-ordinate and advance European research into digital techniques and technologies for applications in future local network environments, and in particular to undertake research into wideband switching techniques, wideband network structures and the use of wideband transmission techniques that will permit the eventual economic and flexible provision of a comprehensive range of customer services and facilities, both narrowband and wideband.

3. The Signatories hereby declare their intention of carrying out the Project jointly, in accordance with the general description given in Annex II, adhering as far as possible to a timetable to be decided by the Management Committee referred to in Annex I.

4. The Project will be carried out through concerted action, in accordance with the provisions of Annex I.

5. The overall value of the activities of the Signatories under the Project is estimated at approximately five million ECU at 1983 prices.

6. The Signatories will make every effort to ensure that the necessary funds are made available under their internal financing procedures.

Section 2

Signatories intend to take part in the Project in one or several of the following ways:

(a) by carrying out studies and research in their technical services or public research establishments (hereinafter referred to as 'public research establishments');

(b) by concluding contracts for studies and research with organizations (hereinafter referred to as 'research contractors');

(c) by contributing to the provision of a Secretariat and/or other coordinatory services or activities necessary for the aims of the Project to be achieved;

(d) by making information on existing relevant research, including all necessary basic data, available to other Signatories;

(e) by arranging for inter-laboratory visits and by cooperating in a small-scale exchange of staff in the later stages.

Section 3

1. This Memorandum of Understanding will take effect for three years on its signing by at least four Signatories.

2. This Memorandum of Understanding may be amended in writing at any time by arrangement between the Signatories.

3. A Signatory which intends, for any reason whatsoever, to terminate its participation in the Project will notify the Secretary-General of the Council of the European Communities of its intention as soon as possible, preferably not later than three months beforehand.

4. If at any time the number of Signatories falls below four, the Management Committee referred to in Annex I will examine the situation which has arisen and will consider whether or not this Memorandum of Understanding should be terminated by decision of the Signatories.

Section 4

1. This Memorandum of Understanding will, for a period of six months from the date of the first signing, remain open for signing, by the governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and also by the European Communities.

The governments referred to in the first subparagraph and the European Communities may take part in the Project on a provisional basis during the above mentioned period, even though they may not have signed this Memorandum of Understanding.

2. After this period of six months has elapsed, applications to sign this Memorandum of Understanding from the governments referred to in

paragraph 1 or from the European Communities will be decided upon by the Management Committee referred to in Annex I, which may attach special conditions thereto.

3. Any Signatory may designate one or more competent public authorities or bodies to act on its behalf in respect of the implementation of the Project.

Section 5

This Memorandum of Understanding is of an exclusively recommendatory nature. It will not create any binding legal effect in public international law.

Section 6

1. The Secretary-General of the Council of the European Communities will inform all Signatories of the signing dates and date of entry into effect of this Memorandum of Understanding and will forward to them all notices which he has received under this Memorandum of Understanding.

2. This Memorandum of Understanding will be deposited with the General Secretariat of the Council of the European Communities. The Secretary-General will transmit a certified copy to each of the Signatories.

Done at Brussels on the fourteenth day of March in the year one thousand nine hundred and eighty-four.

ANNEX I

Coordination of the Project

CHAPTER I

1. A Management Committee (hereinafter referred to as 'the Committee') will be set up composed of not more than two representatives for each Signatory. Each representative may be accompanied by such experts or advisers as he or she may need.

The governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and the European Communities may, in accordance with the second paragraph of Section 4 (1) of the Memorandum of Understanding, participate in the work of the Committee before becoming Signatories to the Memorandum without, however, having the right to vote.

When the European Communities are not a Signatory to the Memorandum of Understanding, a representative of the Commission of the European Communities may attend Committee meetings as an observer.

2. The Committee will be responsible for coordinating the Project and in particular, for making the necessary arrangements for:

- (a) the choice of research topics on the basis of those provided for in Annex II, including any modifications submitted to Signatories by the competent public authorities or bodies; any proposed changes to the Project framework will be referred for an opinion to the COST Technical Committee 'Telecommunications';
- (b) advising on the direction which work should take;
- (c) drawing up detailed plans and defining methods for the different phases of execution of the Project;
- (d) coordinating the contributions referred to in subparagraph (c) of Section 2 of the Memorandum of Understanding;
- (e) keeping abreast of the research being done in the territory of the Signatories and in other countries;
- (f) exchanging research results among the Signatories to the extent compatible with adequate safeguards for the interests of Signatories, their competent public authorities or bodies and research contractors in respect of industrial property rights and commercially confidential material;
- (g) drawing up the annual interim reports and the final report to be submitted to the Signatories and circulated as appropriate;
- (h) dealing with any problem which may arise out of the execution of the Project, including those relating to possible special conditions to be attached to accession to the Memorandum of Understanding in the case of applications submitted more than six months after the date of the first signing.

3. The Committee will establish its rules of procedure.

4. The Secretariat of the Committee will be provided at the invitation of the Signatories by either the Commission of the European Communities or one of the Signatory States.

CHAPTER II

1. Signatories will invite public research establishments or research contractors in their territories to submit proposals for research work to their respective competent public authorities or bodies. Proposals accepted under this procedure will be submitted to the Committee.

2. Signatories will request public research establishments or research contractors, before the Committee takes any decision on a proposal, to submit to the public authorities or bodies referred to in paragraph 1 notification of previous commitments and industrial property rights which they consider might preclude or hinder the execution of the Projects of the Signatories.

CHAPTER III

1. The Signatories will request their public research establishments or research contractors to submit periodical progress reports and a final report.

2. The progress reports will be distributed to the Signatories only, through their representatives on the Committee. The Signatories will treat these progress reports as confidential and will not use them for purposes other than research work. The final reports on the results obtained will have much wider circulation, covering at least the Signatories' public research establishments or research contractors concerned.

CHAPTER IV

1. In order to facilitate the exchange of results referred to in Chapter I, paragraph 2, (g), and subject to national law, Signatories intend to ensure, through the inclusion of appropriate terms in research contracts, that the owners of industrial property rights and technical information resulting from work carried out in implementation of that part of the Project assigned to them under Annex II (hereinafter referred to as 'the research results') will be under an obligation, if so requested by another Signatory (hereinafter referred to as 'the applicant Signatory'), to supply the research results and to grant to the applicant Signatory or to a third party nominated by the applicant Signatory a licence to use the research results and such technical know-how incorporated therein as is necessary for such use if the applicant Signatory requires the granting of a licence for the execution of:

(a) work in respect of the Project;

(b) research and development work within the framework of the applicant Signatory's projects in the same field;

(c) research and development work within the framework of any associated European project undertaken subsequently and in which all or several of the Signatories may be prepared to take part.

Such licences will be granted on fair and reasonable terms, having regard to commercial usage.

2. Signatories will, by including appropriate clauses in contracts placed with research contractors, provide for the licence referred to in paragraph 1 to be extended on fair and reasonable terms, having regard to commercial usage, to previous industrial property rights and to prior technical know-how acquired by the research contractor insofar as the research results could not otherwise be used for the purpose referred to in paragraph 1.

Where a research contractor is unable or unwilling to agree to such extension, the Signatory will submit the case to the Committee, before the contract is concluded; thereafter, the Committee will state its position on the case, if possible after having consulted the interested parties.

3. Signatories will take any steps necessary to ensure that the fulfilment of the conditions laid down in the present Chapter will not be affected by any subsequent transfer of rights to ownership of the research results. Any such transfer will be notified to the Committee.

4. If a Signatory terminates its participation in the Project, any rights of use which it has granted, or is obliged to grant, to, or has obtained from, other Signatories in application of the Memorandum of Understanding and concerning work carried out up to the date on which the said Signatory terminated its participation will continue thereafter.

5. The provisions of paragraphs 1 to 4 will continue to apply after the period of operation of the Memorandum of Understanding has expired and will apply to industrial property rights as long as these remain valid, and to unprotected inventions and technical know-how until such time as they pass into the public domain other than through disclosure by the licensee.

General description of the Project

1. Introduction

The improvement of existing customer services and the provision of a comprehensive range of new services have important implications in local telecommunication networks. The services that have been digitized thusfar are mostly narrowband services, that have already been offered to the subscriber. Demand for new and improved services requiring higher band width and better performance is expected to increase in the future and hence there will be a requirement for the improvement of local networks to enable these demands to be accommodated. Thus in many countries in Europe, PTTs and operating companies are studying strategies for the evolution of their local networks. Advances have been made recently in integrated circuits and fibre optic technology. The downward trend in component cost coupled with their inherent transmission advantages make digital techniques and technologies an increasingly attractive potential solution. It would be advantageous to Europe as a whole and to the participating countries if a coordinated programme were implemented to investigate how digital techniques could contribute to the development of wideband local networks.

2. Scope of the Project

2.1. COST Project 202 bis is a European collaborative research project concerned with exploitation of digital techniques which, in the long term (e.g. up to thirty years), could be used in wideband local networks to provide a comprehensive range of customer services and facilities, both narrowband and wideband.

2.2. The Project will encompass topics with long-term perspectives not hitherto covered by CCITT or CEPT. The aim is to progress research work to a state where the results would be of help to national telecommunications administrations, operating organizations and international bodies in their standardization and development activities.

Taking this into consideration, the COST study will be directed towards a common project to establish the principles for an integrated wideband digital local network.

2.3. Customer service can be broadly classified into two main categories according to the transmission capacity requirements:

(i) narrowband services

(ii) medium and wideband services.

Demand for narrowband and some mediumband services might be satisfied by the exploitation of existing networks whilst wideband services (e.g. the transmission of moving pictures) must rely on the implementation of new network resources.

Whilst there is a general concurrence that demand for wideband services will continue to grow, there is considerable uncertainty at this stage as to the pace of service evolution and the traffic pattern that will emerge. Hence there is a need for flexibility in proposals for network design.

3. Objectives of the Project

The objectives of the Project are to carry out research into digital techniques and technologies for application in future wideband local network environments; in particular to undertake research into wideband switching techniques, wideband network structures and the use of wideband transmission techniques that will:

- 3.1. Permit the eventual economic and flexible provision of a comprehensive range of customer services and facilities, both narrowband and wideband.
- 3.2. Be appropriate to future local switching, transmission, network signalling and control and user equipment technologies.
- 3.3. Take account of options in future network architecture and the principles to be adopted for evolution.
- 3.4. Exploit highly advanced low-cost technology.

4. Technical framework for the Project

In order to facilitate the organization of the task it is suggested that the Project be divided into the following aspects:

- 4.1. Study of switching concepts applicable for all services (narrowband, mediumband and wideband) for duplex as well as broadcast use;
- 4.2. Assessment of the application of new transmission systems for future wideband digital local network applications;
- 4.3. Study of a multiplexing concept for these services, flexible enough to accommodate additions;
- 4.4. Development and refinement of signalling and control protocols suitable for all projected services, by laying down the appropriate levels of the ISDN model on the basis of emerging CCITT recommendations;
- 4.5. Identification of a common user interface for all services, independent of the user's terminal and installation network configuration (star, bus etc.);
- 4.6. Identification of the implications of new service requirements on user equipment;
- 4.7. Examination of structures for wideband integrated digital local networks upon the introduction of optical fibres;
- 4.8. Comparison of the economic viability of alternative system- and network configuration to meet future wideband service demands;
- 4.9. Assessment of emergency facilities required during local power failure.

5. Organizational framework for the Project

Having regard to the objectives defined in Section 3 and the technical framework in Section 4, coordinated research activity should be organized to:

- 5.1. Consider various system alternatives and work out a concept which includes transmission, switching and user equipment. Multiplexing, control and signalling concepts as well as interfaces are to be included;
- 5.2. Divide into subsystems and components;
- 5.3. Coordinate subsystem implementation in individual research organizations;
- 5.4. Assemble laboratory demonstration models;
- 5.5. From the results of the study and the practical realization, definition of a viable system for future realization is expected to emerge as an input to CEPT work.

**Memorandum of Understanding
for the implementation of a
European research project on
wideband digital local telecommunication networks
(COST Project 202 bis)**

Date of entry into force: 5.4.1984

Duration: 4.4.1987

Contracting Parties	Date of signing	Date of entry into force
Belgium	14. 3.1984	14. 3.1984
Denmark	29. 3.1984	29. 3.1984
Germany (FR of)	23. 5.1984	23. 5.1984
France	17.10.1984	17.10.1984
Ireland	12. 9.1984	12. 9.1984
Italy	25. 7.1984	25. 7.1984
Netherlands	14. 3.1984	14. 3.1984
United Kingdom	14. 3.1984	14. 3.1984
Switzerland	31.10.1984	31.10.1984
Finland	13. 4.1984	13. 4.1984
Sweden	5. 4.1984	5. 4.1984

**Memorandum of Understanding
for the implementation of a
European research project on
digital land mobile radio communications
(COST Project 207)**

Memorandum of Understanding for the implementation of a European research project on digital land mobile radio communications (COST Project 207)

The Signatories to this Memorandum of Understanding, declaring their intention to take part in a European research project on digital land mobile radio communications have reached the following understandings:

Section 1

1. The Signatories intend to cooperate in a project to promote research into digital land mobile radio communications (hereinafter referred to as the 'Project').

2. The main objective of the Project is to co-ordinate research activities already underway in Europe and to stimulate new studies on well-defined aspects of digital land mobile radio communications. Results are expected to support the envisaged European public system for the 1990s and to enhance European expertise for further generation systems.

3. The Signatories hereby declare their intention of carrying out the Project jointly, in accordance with the general description given in Annex II, adhering as far as possible to a timetable to be decided by the Management Committee referred to in Annex I.

4. The Project will be carried out through concerted action, in accordance with the provisions of Annex I.

5. The overall value of the activities of the Signatories under the Project is estimated at approximately 500 000 ECU at 1983 prices.

6. The Signatories will make every effort to ensure that the necessary funds are made available under their internal financing procedures.

Section 2

Signatories intend to take part in the Project in one or several of the following ways:

(a) by carrying out studies and research in their technical services or public research establishments (hereinafter referred to as 'public research establishments');

(b) by concluding contracts for studies and research with organizations (hereinafter referred to as 'research contractors');

(c) by contributing to the provision of a Secretariat and/or other coordinatory services or activities necessary for the aims of the Project to be achieved;

(d) by making information on existing relevant research, including all necessary basic data, available to other Signatories;

(e) by arranging for inter-laboratory visits and by cooperating in a small-scale exchange of staff in the later stages.

Section 3

1. This Memorandum of Understanding will take effect for three years on its signing by at least four Signatories.

2. This Memorandum of Understanding may be amended in writing at any time by arrangement between the Signatories.

3. A Signatory which intends, for any reason whatsoever, to terminate its participation in the Project will notify the Secretary-General of the Council of the European Communities of its intention as soon as possible, preferably not later than three months beforehand.

4. If at any time the number of Signatories falls below four, the Management Committee referred to in Annex I will examine the situation which has arisen and will consider whether or not this Memorandum of Understanding should be terminated by decision of the Signatories.

Section 4

1. This Memorandum of Understanding will, for a period of six months from the date of the first signing, remain open for signing, by the governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and also by the European Communities.

The governments referred to in the first subparagraph and the European Communities may take part in the Project on a provisional basis during the abovementioned period, even though they may not have signed this Memorandum of Understanding.

2. After this period of six months has elapsed, applications to sign this Memorandum of Understanding from the governments referred to in paragraph 1 or from the European Communities will be decided upon by the Management Committee referred to in Annex I, which may attach special conditions thereto.

3. Any Signatory may designate one or more competent public authorities or bodies to act on its behalf in respect of the implementation of the Project.

Section 5

This Memorandum of Understanding is of an exclusively recommendatory nature. It will not create any binding legal effect in public international law.

Section 6

1. The Secretary-General of the Council of the European Communities will inform all Signatories of the signing dates and date of entry into effect of this Memorandum of Understanding and will forward to them all notices which he has received under this Memorandum of Understanding.

2. This Memorandum of Understanding will be deposited with the General Secretariat of the Council of the European Communities. The Secretary-General will transmit a certified copy to each of the Signatories.

Done at Brussels on the fourteenth day of March in the year one thousand nine hundred and eighty-four.

ANNEX I

Coordination of the Project

CHAPTER I

1. A Management Committee (hereinafter referred to as 'the Committee') will be set up, composed of not more than two representatives for each Signatory. Each representative may be accompanied by such experts or advisers as he or she may need.

The governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and the European Communities may, in accordance with the second paragraph of Section 4 (1) of the Memorandum of Understanding, participate in the work of the Committee before becoming Signatories to the Memorandum without, however, having the right to vote.

When the European Communities are not a Signatory to the Memorandum of Understanding, a representative of the Commission of the European Communities may attend Committee meetings as an observer.

2. The Committee will be responsible for coordinating the Project and, in particular, for making the necessary arrangements for:

- (a) the choice of research topics on the basis of those provided for in Annex II, including any modifications submitted to Signatories by the competent public authorities or bodies; any proposed changes to the Project framework will be referred for an opinion to the COST Technical Committee 'Telecommunications';
- (b) advising on the direction which work should take;
- (c) drawing up detailed plans and defining methods for the different phases of execution of the Project;
- (d) coordinating the contributions referred to in subparagraph (c) of Section 2 of the Memorandum of Understanding;
- (e) keeping abreast of the research being done in the territory of the Signatories and in other countries;
- (f) liaising with appropriate international bodies;
- (g) exchanging research results among the Signatories to the extent compatible with adequate safeguards for the interests of Signatories, their competent public authorities or bodies and research contractors in respect of industrial property rights and commercially confidential material;
- (h) drawing up the annual interim reports and the final report to be submitted to the Signatories and circulated as appropriate;
- (i) dealing with any problem which may arise out of the execution of the Project, including those relating to possible special conditions to be attached to accession to the Memorandum of Understanding in the case of applications submitted more than six months after the date of the first signing.

3. The Committee will establish its rules of procedure.

4. The Secretariat of the Committee will be provided at the invitation of the Signatories by either the Commission of the European Communities or one of the Signatory States.

CHAPTER II

1. Signatories will invite public research establishments or research contractors in their territories to submit proposals for research work to their respective competent public authorities or bodies. Proposals accepted under this procedure will be submitted to the Committee.

2. Signatories will request public research establishments or research contractors, before the Committee takes any decision on a proposal, to submit to the public authorities or bodies referred to in paragraph 1 notification of previous commitments and industrial property rights which they consider might preclude or hinder the execution of the projects of the Signatories.

CHAPTER III

1. The Signatories will request their public research establishments or research contractors to submit periodical progress reports and a final report.

2. The progress reports will be distributed to the Signatories only, through their representatives on the Committee. The Signatories will treat these progress reports as confidential and will not use them for purposes other than research work. The final reports on the results obtained will have much wider circulation, covering at least the Signatories' public research establishments or research contractors concerned.

CHAPTER IV

1. In order to facilitate the exchange of results referred to in Chapter I, paragraph 2, (g), and subject to national law, Signatories intend to ensure, through the inclusion of appropriate terms in research contracts, that the owners of industrial property rights and technical information resulting from work carried out in implementation of that part of the Project assigned to them under Annex II (hereinafter referred to as 'the research results') will be under an obligation, if so requested by another Signatory (hereinafter referred to as 'the applicant Signatory'), to supply the research results and to grant to the applicant Signatory or to a third party nominated by the applicant Signatory a licence to use the research results and such technical know-how incorporated therein as is necessary for such use if the applicant Signatory requires the granting of a licence for the execution of:

- (a) work in respect of the Project;
- (b) research and development work within the framework of the applicant Signatory's projects in the same field;
- (c) research and development work within the framework of any associated European project undertaken subsequently and in which all or several of the Signatories may be prepared to take part.

Such licences will be granted on fair and reasonable terms, having regard to commercial usage.

2. Signatories will, by including appropriate clauses in contracts placed with research contractors, provide for the licence referred to in paragraph 1 to be extended on fair and reasonable terms, having regard to commercial usage, to previous industrial property rights and to prior technical know-how acquired by the research contractor insofar as the research results could not otherwise be used for the purpose referred to in paragraph 1.

Where a research contractor is unable or unwilling to agree to such extension, the Signatory will submit the case to the Committee, before the contract is concluded; thereafter, the Committee will state its position on the case, if possible after having consulted the interested parties.

3. Signatories will take any steps necessary to ensure that the fulfilment of the conditions laid down in the present Chapter will not be affected by any subsequent transfer to rights to ownership of the research results. Any such transfer will be notified to the Committee.

4. If a Signatory terminates its participation in the Project, any rights of use which it has granted, or is obliged to grant, to, or has obtained from, other Signatories in application of the Memorandum of Understanding and concerning work carried out up to the date on which the said Signatory terminated its participation will continue thereafter.

5. The provisions of paragraphs 1 to 4 will continue to apply after the period of operation of the Memorandum of Understanding has expired and will apply to industrial property rights as long as these remain valid, and to unprotected inventions and technical know-how until such time as they pass into the public domain other than through disclosure by the licensee.

ANNEX II

General description of the work planned for the Project

1. Introduction

Public and private land mobile radio systems are experiencing a very rapid expansion with an increasing degree of sophistication in most countries.

Today public systems using the 160 and 450 MHz frequency bands have been planned and operate generally on a national basis. Only in a few cases does the same system serve more than one country.

The possibility of using one system throughout Europe and the advantages to both the manufactures and subscribers of a larger scale market have already led the CEPT to establish the 'mobile special group' (GSM) with the task of producing guidelines and specifications for a harmonized European public mobile communications system for the 1990s in the 900 MHz frequency band. The basic system parameters should be defined, at the latest, by December 1986. However, the GSM will not attempt to perform all the necessary activities within the group. On the contrary, the group will try to identify all relevant activities outside the group, in administrations, research bodies, etc., with the aim of coordinating with those activities in order to obtain the best utilization of the resources.

In this context it appears that the COST framework is particularly suitable to coordinate research activities on well defined subjects to produce results of direct use for the envisaged European system. To significantly influence the basic parameters of the GSM system the COST results must be available during 1985 or by mid-1986 at the latest.

It is not yet possible to state whether the GSM system will have digital or analogue speech transmission, but it is practically certain that the signalling will be on a digital basis.

Consequently, considering that knowledge of analogue transmission is well advanced, COST activities should concentrate on digital aspects. The results obtained are expected to be in any case useful for the enhancement of European expertise for further generations of mobile communications systems.

The proposal for a COST project has been formulated taking into account the views of the GSM regarding the subjects appropriate for study within the COST framework.

2. Objective of the Project

The objective of the Project is to coordinate research activities already underway in Europe and to stimulate new studies on well defined aspects of digital land mobile radio communications. Results are expected to support the envisaged European public system for the 1990s and to enhance European expertise for further generation systems.

3. Schedule of the activities of the Project

The Project is envisaged to last three years during which results of direct use to the GSM will be produced.

During the Project the possibilities and advantages of a follow-on project, directed towards exploring the practicality of other land mobile communication systems and expanding European expertise in the field, will be examined.

4. Technical programme

The technical programme of the Project, detailed in the following sub-sections, has been defined taking into account the following factors:

- (a) that some modulation techniques and baseband processes may be especially relevant to mobile radio;
- (b) that acceptable communication relies upon knowledge of the interrelation between topography and radio transmission;
- (c) and the precise studies to be performed on each topic will be influenced by the foreseen characteristics of the CEPT/GSM system or other systems.

4.1. Propagation

- (a) Collation of data, preferably from modulated transmission, related to topography.
- (b) Development of compatible methods and procedures for predicting propagation characteristics from topographical data for both wanted and interfering signals. Full use of such results will require harmonized data bases.
- (c) Development of narrowband and wideband fading simulators.

4.2. Modulation

Study and demonstration of optimum modulation techniques taking into account e.g. spectrum efficiency, channel capacity, performance requirements, radio channel characteristics and cost factors.

4.3. Baseband processes

Study and demonstration for the mobile radio environment of:

- (a) Optimum speech encoding processes, taking into account that these processes may differ in the two directions of transmission;
- (b) Methods for providing communication privacy;
- (c) Signalling and data transmission techniques.

5. Envisaged cost of the activities in the Project

Much European investment has already been committed to research activities. Consequently the main objective of this Project is to make full use of existing resources. However, Signatories may wish to make additional funds available in order to increase their participation in the Project.

In all cases national funds should be made available for the work of the Committee. In particular this includes:

- (a) Coordination of national efforts;
- (b) Preparation of contributions of the Committee meetings;
- (c) Travel expenses.

Average total cost per Signatory, for the work of the Committee, is estimated to be 15 000 ECU for travel expenses plus 1.5 man-years for a three-year period of the Project (assuming 40 000 ECU per man-year, it comes to $0.5 \times 40\,000 = 20\,000$ ECU per year. For three years the amount is $20\,000 \times 3 + 15\,000 = 75\,000$ ECU per Signatory).

6. Participation in the project

- 6.1. The following countries have expressed an interest in participating in the Project: France, Germany, Italy, Netherlands, U.K., Finland and Sweden.
- 6.2. The Management Committee should invite a representative of CEPT/GSM to take part in the Project, considering the present role of this group in producing guidelines and specifications for a harmonized European public mobile communication system for the 1990s.

**Memorandum of Understanding
for the implementation of a
European research project on
digital land mobile radio communications
(COST Project 207)**

Date of entry into force: 13.4.1984

Duration 12.4.1987

Contracting Parties	Date of signing	Date of entry into force
Belgium	14. 3.1984	14. 3.1984
Germany (FR of)	23. 5.1984	23. 5.1984
France	7. 6.1984	7. 6.1984
Italy	25. 7.1984	25. 7.1984
Netherlands	14. 3.1984	14. 3.1984
United Kingdom	14. 3.1984	14. 3.1984
Austria	14. 3.1984	14. 3.1984
Switzerland	15.10.1984	15.10.1984
Finland	13. 4.1984	13. 4.1984
Sweden	5. 4.1984	5. 4.1984

**Memorandum of Understanding
for the implementation of a
European research project on
man-machine communication by means
of speech signals**

(COST Project 209)

Memorandum of Understanding for the implementation of a European research project on man-machine communication by means of speech signals

(COST Project 209)

The Signatories to this Memorandum of Understanding, declaring their common intention to take part in a European research project on man-machine communication by means of speech signals have reached the following understandings:

Section 1

1. The Signatories intend to cooperate in a project to promote research into man-machine communication by means of speech signals (hereinafter referred to as the 'Project').

2. The main objective of the Project is to provide, for the telecommunications network, man-machine dialogue systems performing as well as the normal telephone conversation between people.

3. The Signatories hereby declare their intention of carrying out the Project jointly, in accordance with the general description given in Annex II, adhering as far as possible to a timetable to be decided by the Management Committee referred to in Annex I.

4. The Project will be carried out through concerted action, in accordance with the provisions of Annex I.

5. The overall value of the activities of the Signatories under the Project is estimated at approximately 150 000 ECU at 1983 prices.

6. The Signatories will make every effort to ensure that the necessary funds are made available under their internal financing procedures.

Section 2

Signatories intend to take part in the Project in one or several of the following ways:

(a) by carrying out studies and research in their technical services or public research establishments (hereinafter referred to as 'public research establishments');

(b) by concluding contracts for studies and research with organizations (hereinafter referred to as 'research contractors');

(c) by contributing to the provision of a Secretariat and/or other coordinatory services or activities necessary for the aims of the Project to be achieved;

(d) by making information on existing relevant research, including all necessary basic data, available to other Signatories;

(e) by arranging for inter-laboratory visits and by cooperating in a small-scale exchange of staff in the later stages.

Section 3

1. This Memorandum of Understanding will take effect for three years on its signing by at least four Signatories.

2. This Memorandum of Understanding may be amended in writing at any time by arrangement between the Signatories.

3. A Signatory which intends, for any reason whatsoever, to terminate its participation in the Project will notify the Secretary-General of the Council of the European Communities of its intention as soon as possible, preferably not later than three months beforehand.

4. If at any time the number of Signatories falls below four, the Management Committee referred to in Annex I will examine the situation which has arisen and will consider whether or not this Memorandum of Understanding should be terminated by decision of the Signatories.

Section 4

1. This Memorandum of Understanding will, for a period of six months from the date of the first signing, remain open for signing, by the governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and also by the European Communities.

The governments referred to in the first subparagraph and the European Communities may take part in the Project on a provisional basis during the abovementioned period, even though they may not have signed this Memorandum of Understanding.

2. After this period of six months has elapsed, applications to sign this Memorandum of Understanding from the governments referred to in paragraph 1 or from the European Communities will be decided upon by the Management Committee referred to in Annex I, which may attach special conditions thereto.

3. Any Signatory may designate one or more competent public authorities or bodies to act on its behalf in respect of the implementation of the Project.

Section 5

This Memorandum of Understanding is of an exclusively recommendatory nature. It will not create any binding legal effect in public international law.

Section 6

1. The Secretary-General of the Council of the European Communities will inform all Signatories of the signing dates and date of entry into effect of this Memorandum of Understanding and will forward to them all notices which he has received under this Memorandum of Understanding.

2. This Memorandum of Understanding will be deposited with the General Secretariat of the Council of the European Communities. The Secretary-General will transmit a certified copy to each of the Signatories.

Done at Brussels on the fourth day of April in the year one thousand nine hundred and eighty-four.

ANNEX I

Coordination of the Project

CHAPTER I

1. A Management Committee (hereinafter referred to as 'the Committee') will be set up composed of not more than two representatives for each Signatory. Each representative may be accompanied by such experts or advisers as he or she may need.

The governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and the European Communities may, in accordance with the second paragraph of Section 4 (1) of the Memorandum of Understanding, participate in the work of the Committee before becoming Signatories to the Memorandum without, however, having the right to vote.

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2. The Committee will be responsible for coordinating the Project and, in particular, for making the necessary arrangements for:

- (a) the choice of research topics on the basis of those provided for in Annex II, including any modifications submitted to Signatories by the competent public authorities or bodies; any proposed changes to the Project framework will be referred for an opinion to the COST Technical Committee 'Telecommunications';
- (b) advising on the direction which work should take;
- (c) drawing up detailed plans and defining methods for the different phases of execution of the Project;
- (d) coordinating the contributions referred to in subparagraph (c) of Section 2 of the Memorandum of Understanding;
- (e) keeping abreast of the research being done in the territory of the Signatories and in other countries;
- (f) liaising with appropriate international bodies;
- (g) exchanging research results among the Signatories to the extent compatible with adequate safeguards for the interests of Signatories, their competent public authorities or bodies and research contractors in respect of industrial property rights and commercially confidential material;
- (h) drawing up the annual interim reports and the final report to be submitted to the Signatories and circulated as appropriate;
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3. The Committee will establish its rules of procedure.

4. The Secretariat of the Committee will be provided at the invitation of the Signatories by either the Commission of the European Communities or one of the Signatory States.

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1. The Signatories will request their public research establishments or research contractors to submit periodical progress reports and a final report.

2. The progress reports will be distributed to the Signatories only, through their representatives on the Committee. The Signatories will treat these progress reports as confidential and will not use them for purposes other than research work. The final reports on the results obtained will have much wider circulation, covering at least the Signatories' public research establishments or research contractors concerned.

CHAPTER IV

1. In order to facilitate the exchange of results referred to in Chapter I, paragraph 2, (g), and subject to national law, Signatories intend to ensure, through the inclusion of appropriate terms in research contracts, that the owners of industrial property rights and technical information resulting from work carried out in implementation of that part of the Project assigned to them under Annex II (hereinafter referred to as 'the research results') will be under an obligation, if so requested by another Signatory (hereinafter referred to as 'the applicant Signatory'), to supply the research results and to grant to the applicant Signatory a licence to use the research results and such technical know-how incorporated therein as is necessary for such use if the applicant Signatory requires the granting of a licence for the execution of:

(a) work in respect of the Project;

(b) research and development work within the framework of the applicant Signatory's projects in the same field;

(c) research and development work within the framework of any associated European project undertaken subsequently and in which all or several of the Signatories may be prepared to take part.

Such licences will be granted on fair and reasonable terms, having regard to commercial usage.

2. Signatories will, by including appropriate clauses in contracts placed with research contractors, provide for the licence referred to in paragraph 1 to be extended on fair and reasonable terms, having regard to commercial usage, to previous industrial property rights and to prior technical know-how acquired by the research contractor insofar as the research results could not otherwise be used for the purpose referred to in paragraph 1.

Where a research contractor is unable or unwilling to agree to such extension, the Signatory will submit the case to the Committee, before the contract is concluded; hereafter, the Committee will state its position on the case, if possible after having consulted the interested parties.

3. Signatories will take any steps necessary to ensure that the fulfilment of the conditions laid down in the present Chapter will not be affected by any subsequent transfer of rights to ownership of the research results. Any such transfer will be notified to the Committee.

4. If a Signatory terminates its participation in the Project, any rights of use which it has granted, or is obliged to grant, to, or has obtained from, other Signatories in application of the Memorandum of Understanding and concerning work carried out up to the date on which the said Signatory terminates its participation will continue thereafter.

5. The provisions of paragraphs 1 to 4 will continue to apply after the period of operation of the Memorandum of Understanding has expired and will apply to industrial property rights as long as these remain valid, and to unprotected inventions and technical know-how until such time as they pass into the public domain other than through disclosure by the licensee.

General description of the Project

1. Introduction

Communication by means of speech is the oldest and the most important form of information exchange between human beings, and children learn to speak simply by the 'nature method'. The use of written communication on the other hand is a comparatively recent invention, and a certain formal education is necessary to acquire the skills of reading and writing.

The rapidly growing use of computers and 'intelligent terminals' has necessitated the development of interactive man-machine communication, and the dominating input-output systems up till now have been based on text devices, for instance typewriter keyboards for the input and printed (or displayed) text output.

It would obviously be useful to be able to speak to a computer and to get a verbal answer. Thus, we need some sort of 'phonetic typewriter' which ideally should be able to transcribe any spoken message into a corresponding text-string. Conversely, we need a 'speech synthesizer' which ideally should be able to convert any text-string into a spoken message.

It is possible today to design a reasonably satisfactory speech synthesizer, although the quality obtained depends markedly on the language used and of course on the complexity of the system and the price we are willing to pay.

The situation is much more difficult with respect to voice-recognition, the 'phonetic typewriter' problem.

It is possible today to design speech-recognition systems which are able to recognize a rather limited number of words or sentences spoken by a particular speaker, who beforehand has 'trained' the system with the same words or sentences. The complexity of such a system, however, increases (almost exponentially) with the size of the vocabulary, and attempts to make the system truly speaker-independent have not been very successful up till now. Another difficulty is that the recognition time also increases rapidly with the size of the vocabulary.

The advances in speech synthesizer design in the last decade have mainly been due to the developments of LSI or VLSI (Very Large Scale Integrated) circuits which have dramatically reduced the cost of storage and signal processing. It is perhaps understandable that some enthusiasts believe that the remaining problems in voice recognition may also be solved solely by advanced signal processing.

This, however, is a gross oversimplification. The fact is that we know a lot about speech production, and a speech synthesizer is more or less an electrical signal processor which emulates a familiar acoustical signal processor viz., the vocal chords plus the vocal tract.

On the other hand we know very little about the speech-recognition processes in the brain, so we have few guidelines to efficient speech recognition algorithms. We do know, however, that human speech perception is amazingly effective and robust; we are able to recognize speech-signals severely mutilated by noise, distortion, reverberation etc.. Indeed, the success of speech synthesis could be claimed to be largely determined by our very tolerant, human-speech perception.

Present systems for automatic voice-recognition are very crude compared to the human perception mechanism; even speaker-dependent systems with a limited vocabulary are vulnerable to signal distortion and noise.

The potential benefits of man-machine communication systems based upon speech signals are so great, however, that many countries in spite of the difficulties mentioned are supporting large scale research programmes within the fields of speech-synthesis and speech-recognition. Some countries (e.g. Japan) optimistically expect to solve the remaining problems in the short term, at least before 1990.

Telephone systems were originally based wholly upon speech communication between people; the number (or just the name) to be called was given by the subscriber to an operator, who routed the call to the required party. This simple call set-up procedure has been superseded by 'automatic telephone systems' where the subscriber normally communicates with the 'switching machine' by means of dial or push-button signals.

In some cases, however, operators are still needed, for instance for certain call-categories or for various information services.

It would obviously be convenient for the subscriber to revert to the old speech-signalling method, i.e. to communicate with the 'switching machine' by speech input signals.

The telephone administrations on the other hand are interested in a further reduction of operator-assisted services, for example by means of automatic information services, speech output.

Thus, there is a need for applications of man-machine communication by speech signals in our telephone systems. Speech synthesis has already been applied to some extent for various information services, speech output, but speech recognition systems which allow a subscriber to use 'voice dialling' (or for instance to obtain access to a data base by speech signals) are not yet commercially available.

The speech recognition (or speech input) problem is generally even more difficult for telecommunication applications than for office automation machinery, because of signal distortion and noise problems. Furthermore, it is for many telecommunication applications necessary to have speaker-independent systems.

It is thus necessary to invest extra research efforts to solve the problems of interactive man-machine communication by speech signals in the telephone network.

2. Scope of the Project

COST Project 209 is a European collaborative research project concerned with man-machine communication based upon speech signalling in the telephone network.

This definition covers a very wide field indeed, but the central themes deal with 'speech-to-text' or speech recognition, and 'text-to-speech' or speech synthesis. A useful man-machine communication system must have interactive features, and it is thus necessary to cover both speech generation and speech perception.

Speech coding and speech storage methods are considered as part of the general signal processing techniques needed for the realization of the Project.

Speaker identification methods are of interest for certain man-machine transactions, but other verification techniques, e.g. passwords, could also be used in a truly interactive man-machine system.

Language translation services have been mentioned in connection with man-machine communication systems. It appears, however, that this is a purely linguistic problem, where a text-string in one language ideally is converted automatically into a text-string in another language. This is certainly difficult enough, but it may be considered as a separate problem.

3. Objectives of the Project

The ultimate objective of the research project is to provide man-machine dialogue systems in the telecommunications network which perform as well as the normal telephone conversation between people.

This is a long range objective, and it is realized that more limited goals must be set in the short term.

It is provisionally proposed to study:

- (1) The possibility of a common programming structure and a common programming language for text-to-speech synthesis of a number of European languages.
- (2) Methodologies for quality assessments of speech recognition systems.
- (3) The human factors involved in the design of a man-machine dialogue system.

re 1

Most speech-synthesizers today use a combination of analysis-synthesis methods and concatenation of words or syllables. It is believed, however, that in the longer term it will be advantageous to use a more general text-to-speech synthesis method. Hence, it seems appropriate to investigate the existing text-to-speech systems, compare the quality obtained and the computational complexities, and to make an attempt to use a common programming language to describe the synthesis processes.

Incidentally, this would be a very useful tool for a general text-to-speech translation system for European languages, if and when a text-to-text translation system materializes.

re 2

It is very difficult today to make comparisons between speech recognition systems; they are usually described by means of 'percentage of words correctly identified' or the like, but these figures can be rather misleading.

It is essential for telecommunication applications of speech recognition systems to be able to estimate the effect of, for instance, band-limiting, noise and speaker dependence, and it is thus necessary to establish test methodologies which enable fair comparisons to be made between systems and at the same time indicate sufficient details about the failure mechanisms to make progress possible.

re 3

It is assumed that it is possible to set up a reasonably satisfactory speech-recognition system (speaker-independent) using the normal telephone system, if the vocabulary is very small.

Simple dialogue systems could then be designed, and the human factor problems studied.

4. Project organization

It is realized that each European country must create a specific man-machine communication system based upon its own language, and this fact of course influences the degree of research coordination obtainable.

It is possible, however, to find research subjects of common interest as indicated in the examples given above, and it is proposed to encourage such joint research activities, coordinating the work of existing national groups and/or setting up new *ad hoc* groups.

The Project should lead to a general European pooling of information within the field of interest and the creation of specialized working groups. It is envisaged that the participants arrange European meetings and workshops to present their work and discuss the results.

**Memorandum of Understanding
for the implementation of a
European research project on
man-machine communication by means of speech signals
(COST Project 209)**

Date of entry into force: 4.4.1984

Duration: 3.4.1987

Contracting Parties	Date of signing	Date of entry into force
Denmark	4.4.1984	4.4.1984
Germany (FR of)	23.5.1984	23.5.1984
France	4.4.1984	4.4.1984
Italy	25.7.1984	25.7.1984
Netherlands	23.5.1984	23.5.1984
United Kingdom	4.4.1984	4.4.1984
Finland	4.4.1984	4.4.1984
Sweden	4.4.1984	4.4.1984

**Memorandum of Understanding
for the implementation of a European research
project on the influence of the atmosphere on
interference between radio communication systems at
frequencies above 1 GHz**

(COST Project 210)

Memorandum of Understanding for the implementation of a European research project on the influence of the atmosphere on interference between radio communication systems at frequencies above 1 GHz

(COST Project 210)

The Signatories to this Memorandum of Understanding, declaring their common intention to take part in a European research project on the influence of the atmosphere on interference between radio communication systems at frequencies above 1 GHz, have reached the following understandings:

Section 1

1. The Signatories intend to cooperate in a project to promote research into collecting, correlating and analyzing data on radio wave propagation phenomena related to interference between radio communication systems emphasizing the influence of the atmospheric conditions (hereinafter referred to as the 'Project').

2. The main objective of the Project is to co-ordinate new experiments, collate and assess the results of existing European activities in the field of propagation aspects relating to radio interference at frequencies above 1 GHz. From data already being obtained and data to be derived from new experimental links a comprehensive unified data base will be produced, with which models can be developed and evaluated for the European area. These propagation models will serve as a basis for frequency planning, coordination procedures and interference calculations with respect to future radio communication systems within Europe.

3. The Signatories hereby declare their intention of carrying out the project jointly, in accordance with the general description given in Annex II, adhering as far as possible to a timetable to be decided by the Management Committee referred to in Annex I.

4. The Project will be carried out through concerted action, in accordance with the provisions of Annex I.

5. The overall value of the activities of the Signatories under the Project is estimated at approximately 200 000 ECU per Signatory at 1983 prices

for the entire five-year period of the Project (see general description of the Project, Annex II, point 7).

6. The Signatories will make every effort to ensure that the necessary funds are made available under their internal financing procedures.

Section 2

Signatories intend to take part in the Project by an accelerated exchange of information in one or several of the following ways:

(a) by carrying out studies and research in their technical services or public research establishments (hereinafter referred to as 'public research establishments');

(b) by concluding contracts for studies and research with organizations (hereinafter referred to as 'research contractors');

(c) by contributing to the provision of a Secretariat and/or other coordinatory services or activities necessary for the aims of the Project to be achieved.

(d) by making information on existing relevant research, including all necessary basic data, available to other Signatories;

(e) by arranging for frequent inter-laboratory visits.

Section 3

1. This Memorandum of Understanding will take effect for five years on its signing by at least four Signatories.
2. This Memorandum of Understanding may be amended in writing at any time by arrangement between the Signatories.
3. A Signatory which intends, for any reason whatsoever, to terminate its participation in the Project will notify the Secretary-General of the Council of the European Communities of its intention as soon as possible, preferably not later than three months beforehand.
4. If at any time the number of Signatories falls below four, the Management Committee referred to in Annex I will examine the situation which has arisen and will consider whether or not this Memorandum of Understanding should be terminated by decision of the Signatories.

Section 4

1. This Memorandum of Understanding will, for a period of six months from the date of the first signing, remain open for signing, by the governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and also by the European Communities.

The governments referred to in the first subparagraph and the European Communities may take part in the Project on a provisional basis during

the abovementioned period, even though they may not have signed this Memorandum of Understanding.

2. After this period of six months has elapsed, applications to sign this Memorandum of Understanding from the governments referred to in paragraph 1 or from the European Communities will be decided upon by the Management Committee referred to in Annex I, which may attach special conditions thereto.
3. Any Signatory may designate one or more competent public authorities or bodies to act on its behalf in respect of the implementation of the Project.

Section 5

This Memorandum of Understanding is of an exclusively recommendatory nature. It will not create any binding legal effect in public international law.

Section 6

1. The Secretary-General of the Council of the European Communities will inform all Signatories of the signing dates and date of entry into effect of this Memorandum of Understanding and will forward to them all notices which he has received under this Memorandum of Understanding.
2. This Memorandum of Understanding will be deposited with the General Secretariat of the Council of the European Communities. The Secretary-General will transmit a certified copy to each of the Signatories.

Done at Brussels on the seventh day of June in the year one thousand nine hundred and eighty-four.

ANNEX I

Coordination of the Project

CHAPTER I

1. A Management Committee (hereinafter referred to as 'the Committee') will be set up, composed of not more than two representatives for each Signatory. Each representative may be accompanied by such experts or advisers as he or she may need.

The governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and the European Communities may, in accordance with the second paragraph of Section 4 (1) of the Memorandum of Understanding, participate in the work of the Committee before becoming Signatories to the Memorandum without, however having the right to vote.

When the European Communities is not a Signatory to the Memorandum of Understanding, a representative of the Commission of the European Communities may attend Committee meetings as an observer.

2. The Committee will be responsible for coordinating the Project and in particular for making the necessary arrangements for:

- (a) the choice of research topics on the basis of those provided for in Annex II, including any modifications submitted to Signatories by the competent authorities or bodies; any proposed changes to the Project framework will be referred for an opinion to the COST Technical Committee 'Telecommunications';
- (b) advising on the direction which work should take;
- (c) drawing up detailed plans and defining methods for the different phases of execution of the Project;
- (d) coordinating the contributions referred to in subparagraph (c) of Section 2 of the Memorandum of Understanding;
- (e) keeping abreast of the research being done in the territory of the Signatories and in other countries;
- (f) liaising with appropriate international bodies;
- (g) exchanging research results among the Signatories to the extent compatible with adequate safeguards for the interests of Signatories, their competent public authorities or bodies and research contractors in respect of industrial property rights and commercially confidential material;
- (h) drawing up the annual interim reports and the final report to be submitted to the Signatories and circulated as appropriate;
- (i) dealing with any problem which may arise out of the execution of the Project, including those relating to possible special conditions to be attached to accession to the Memorandum of Understanding in the case of applications submitted more than six months after the date of the first signing.

3. The Committee will establish its rules of procedure.

4. The Secretariat of the Committee will be provided at the invitation of the Signatories by either the Commission of the European Communities or one of the Signatory States.

CHAPTER II

1. Signatories will invite public research establishments or research contractors in their territories to submit proposals for research work to their respective competent public authorities or bodies. Proposals accepted under this procedure will be submitted to the Committee.

2. Signatories will request public research establishments or research contractors, before the Committee takes any decision on a proposal, to submit to the public authorities or bodies referred to in paragraph 1 notification of previous commitments and industrial property rights which they consider might preclude or hinder the execution of the projects of the Signatories.

CHAPTER III

1. Signatories will request their public research establishments or research contractors to submit periodical progress reports and a final report.

2. The progress reports will be distributed to the Signatories only, through their representatives on the Committee. The Signatories will treat these progress reports as confidential and will not use them for purposes other than research work. The final reports on the results obtained will have much wider circulation, covering at least the Signatories' public research establishments or research contractors concerned.

CHAPTER IV

1. In order to facilitate the exchange of results referred to Chapter I, paragraph 2 (g), and subject to national law, Signatories intend to ensure, through the inclusion of appropriate terms in research contracts, that the owners of industrial property rights and technical information resulting from the work carried out in implementation of that part of the Project assigned to them under Annex II (hereinafter referred to as 'the research results') will be under an obligation, if so requested by another Signatory (hereinafter referred to as 'the applicant Signatory'), to supply the research results and to grant to the applicant Signatory or to a third party nominated by the applicant Signatory a licence to use the research results and such technical know-how incorporated therein as is necessary for such use if the applicant Signatory requires the granting of a licence for the execution of:

- (a) work in respect of the Project;
- (b) research and development work within the framework of the applicant Signatory's projects in the same field;
- (c) research and development work within the framework of any associated European project undertaken subsequently and in which all or several of the Signatories may be prepared to take part.

Such licences will be granted on fair and reasonable terms, having regard to commercial usage.

2. Signatories will, by including appropriate clauses in contracts placed with research contractors, provide for the licence referred to in paragraph 1 to be extended on fair and reasonable terms, having regard to commercial usage, to previous industrial property rights and to prior technical know-how acquired by the research contractor in so far as the research results could not otherwise be used for the purpose referred to in paragraph 1.

Where a research contractor is unable or unwilling to agree to such extension, the Signatory will submit the case to the Committee, before the contract is concluded; thereafter, the Committee will state its position on the case, if possible after having consulted the interested parties.

3. Signatories will take any steps necessary to ensure that the fulfilment of the conditions laid down in the present Chapter will not be affected by any subsequent transfer of rights to ownership of the research results. Any such transfer will be notified to the Committee.

4. If a Signatory terminates its participation in the Project, any rights of use which it has granted, or is obliged to grant, to, or has obtained from, other Signatories in application of the Memorandum of Understanding and concerning work carried out up to the date on which the said Signatory terminates its participation will continue thereafter.

5. The provisions of paragraphs 1 to 4 will continue to apply after the period of operation of the Memorandum of Understanding has expired and will apply to industrial property rights as long as these remain valid, and to unprotected inventions and technical know-how until such time as they pass into the public domain other than through disclosure by the licensee.

ANNEX II

General description of the work planned for the Project

1. Introduction

In the last decade, within the COST framework, attention has been concentrated on radio propagation phenomena which may impair the availability of radio communication systems at frequencies above 10 GHz.

Project COST 25/4 was concentrated on terrestrial radio communication systems and was terminated at the end of 1978. The coordination of the extensive radio propagation and associated meteorological measurements carried out throughout Europe and the unification of the procedures for the comparison of the results obtained were unique features of this Project.

As a result of that work, Europe had a more comprehensive data base than would have resulted from individual national efforts. The results obtained were of value for terrestrial systems planning at frequencies above 10 GHz in Europe and have been incorporated in CCIR reports and recommendations.

Project COST 205 was started at the end of 1980. The objective of the project is to collate and assess the results of European activities in the field of slant path propagation at frequencies between 11 and 18 GHz, especially in conjunction with OTS and SIRIO experiments, in order to produce a comprehensive unified data base with which models can be developed or evaluated for the European area. These propagation models will serve as a basis for planning future European satellite communication systems in the above frequency range.

The Projects COST 25/4 and COST 205 concentrated on propagation phenomena which impair the availability of terrestrial and satellite communication systems respectively. In these Projects no attention is paid to propagation phenomena which may cause mutual interference between radio communication systems using the same frequency bands. The frequency allocations as laid down in the Radio Regulations indicate a large number of frequency bands to be shared by different radio services. Therefore countries in regions with dense radio communication networks (as in Europe) should seriously be concerned about radio interference problems.

Propagation data relating to interference are an essential part of the coordination procedures as laid down in the Radio Regulations. The problems in Europe are difficult, because a coordination area incorporates several small countries and so the practical and administrative implications of these coordination procedures are of serious concern.

At frequencies above 1 GHz, interference is dominated by propagation mechanisms such as ducting, scattering, diffraction, reflection and attenuation by atmospheric constituents. Although some work has been carried out throughout Europe, the above topics have not been adequately covered. The differing climatic and geographical conditions throughout Europe make it essential that a joint European project should be implemented to provide the missing information.

2. Objective of the Project

The objective of the Project is to coordinate the new experiments, collate and assess the results of existing European activities in the field of propagation aspects relating to radio interference at frequencies above 1 GHz. From data already being obtained and data to be derived from new experimental links a comprehensive unified data base will be produced, with which models can be developed and evaluated for the European area. These propagation models will serve as a basis for frequency planning, coordination procedures and interference calculations with respect to future radio communication systems within Europe.

3. Scope and schedule of activities of the Project

In order to fulfil the objective of the Project the activities will include:

- (a) the coordination of new experiments, including the collection of data from long distance links over different terrain and different climatic conditions,
- (b) the harmonization of criteria for data collection in order to produce a unified data base,
- (c) the collection of data already acquired and data derived from new experiments,
- (d) the establishment of a common reliable data base, analysis of data collected and general discussion of results,
- (e) the provision of tested propagation models and predictive techniques which may serve as a basis for frequency planning, coordination procedures and interference calculations.

The activities will concentrate mainly on propagation phenomena relative to interference at frequencies between 1 and 40 GHz. These will include effects due to super-refraction (ducting), gaseous absorption, rain scatter and site shielding.

The following time schedule will serve as a basis for the activities above:

Activity	Years after start of the Project				
	1	2	3	4	5
(a) Coordination of new experiences					
(b) Harmonization of data collection					
(c) Collection of data					
(d) Establishment of a common reliable data base					
(e) Testing of models and predictive techniques					

4. Suitability of the COST framework for the Project

From the experience gained in the coordination of the previous COST Projects concerning radio propagation (COST/25/4 and COST 205) the following benefits were found:

- (a) The coordination of the extensive meteorological and radio propagation measurements carried out throughout Europe and the harmonization of the procedures for the comparison of the results obtained were unique features of this Project.
- (b) Delegates of the participating countries were drawn from PTT administrations, universities and other research institutes. The successful collaboration was indeed noteworthy in view of this diverse representation.
- (c) The setting up of a Committee whose members were directly involved with the research ensured a highly productive framework for the dissemination and correlation of the experimental results, ideas and information.
- (d) In some countries the form of cooperation established within this project strengthened the technical and scientific effort available at a national level.

- (e) The technical results achieved through the cooperation satisfied high international standards.

The above benefits are of relevance to the proposed Project and it can be expected that results of a comparable high standard will be achieved.

With respect to the proposed Project cooperation between European countries, it is necessary to establish experimental microwave links of sufficiently long paths. In addition the international implications of coordination procedures and interference calculations enhance the need for a joint European undertaking.

Having regard to the necessity for required cooperation between countries for the realization of new experiments and the necessity of coordinating data collection and analysis, a new COST Project is considered to be the appropriate framework to achieve the objective.

5. Appropriate form of cooperation

The suggested form of cooperation is that Signatories are represented in the Management Committee by delegates who should be expected to:

- (a) attend and contribute to meetings of the Management Committee, these meetings typically numbering three annually,
- (b) be involved in an active programme in the framework of the Project objective and time scale,
- (c) be responsible for liaising between the Management Committee and national group of experimenters.

In addition Signatories are expected to promote some of the new experiments as outlined in point 6.

6. Technical programme

When discussing mutual interference between radiocommunication systems using the same frequency bands, the following propagation phenomena are considered to be of prime importance in the frequency band between 1 and 40 GHz.

(a) Super-refraction including ducting

Theoretical and practical work envisaged under this heading would be directed towards the following topics:

- (1) the physical extent of atmospheric ducts over land and sea surfaces;
- (2) the effect of terrain and sea roughness on surface and elevated ducts, including the interruption/termination of duct propagation by topographic features;
- (3) the relative importance of surface and elevated ducts over land, sea and coastal areas;
- (4) for frequencies above 10 GHz where inter-system distances can be well below 100 km, the propagation characteristics of paths which terminate at a short distance beyond the horizon;
- (5) gaseous absorption within ducts, especially at frequencies around 22.4 GHz and the appropriate values of water vapour concentration to be used in prediction models;
- (6) coupling between antenna and duct: including the effects of antenna beam-width; and
- (7) the acquisition and use of meteorological data as a basis for interference prediction.

(b) Gaseous absorption

At frequencies above 10 GHz advantage with respect to interference can be taken of the additional attenuation due to atmospheric gases. In particular, attenuation due to water vapour and oxygen has to be envisaged. The relation between the attenuation and water vapour/oxygen concentration is well established from a theoretical point of view. However, measurements are requested to validate the assumptions made and to get more precise information on the gaseous absorption in relation to the variability of radio meteorological parameters such as the water vapour concentration.

(c) Hydrometeorscatter

Topics for study are envisaged in the following fields:

- (1) off-beam scatter;
- (2) concurrent attenuation with scatter;
- (3) rain characteristics.

(d) Site shielding

Site shielding natural terrain features (e.g. hills) is used in locating earth stations for the existing shared frequency (4/6 GHz). Thus in addition to antenna discrimination, additional path loss due to site shielding by hills can facilitate coordination and frequency re-use.

At the higher frequency where, in addition to the effects of trans-horizon interference, rain scatter effects become significant, the benefits of shielding by natural and man-made obstacles will become even more important.

Use of the higher frequency bands at 11/14 and 20/30 GHz for small earth stations will lead to a generally higher density of sites and hence a greater potential interference problem. These services are most likely in city centres where in some cases they may share frequencies with terrestrial point-to-point or multipoint systems sharing the band. The terrestrial services themselves could also be subjected to interference from neighbouring links (rain-scatter) or distant links (trans-horizon ducting).

In an urban situation, advantage might be taken of buildings or vegetation to give added protection but there is little quantitative information at these frequencies to aid planning.

Generally for these frequencies there is little information on attenuation, reflections, diffraction or scattering from buildings or vegetation.

7. Envisaged cost of the activities in the Project

At present in some countries an active research programme is already under way. However there is a need for considerable additional experimentation in new topics and in different areas of Europe. Signatories are expected to promote an active national involvement by means of appropriate funding.

A minimum level of funding for each Signatory for new experimentation should be 25 000 ECU at 1983 prices (equipment expenditure) plus one man-year for experimental works during the entire period of the Project. This funding is appropriate for the installation and operation of a receiving station. An alternative acceptable contribution could be theoretical modelling support or provision of data from earlier experiments.

In addition in all cases funds should be made available for the work of the Management Committee. In particular this includes:

- Average cost per Signatory, for the work of the Management Committee, is estimated to be 25 000 ECU at 1983 prices for travel expenses plus two man-years for the entire period of the Project.

— man-power for experimentation:	one man-year \times 50 K ECU = 50 K ECU
— man-power for Management Committee:	two man-years \times 50 K ECU = 100 K ECU
— instrumentation:	= 25 K ECU
— travel expenses:	= 25 K ECU

**Memorandum of Understanding
for the implementation of a European research
project on the influence of the atmosphere on
interference between radio communication systems at
frequencies above 1 GHz
(COST Project 210)**

Date of entry into force: 7.6.1984

Duration: 6.6.1989

Contracting Parties	Date of signing	Date of entry into force
Denmark	7. 6.1984	7. 6.1984
Germany (FR of)	12. 9.1984	12. 9.1984
France	17.10.1984	17.10.1984
Ireland	12. 9.1984	12. 9.1984
Netherlands	7. 6.1984	7. 6.1984
United Kingdom	7. 6.1984	7. 6.1984
Sweden	7. 6.1984	7. 6.1984

**Memorandum of Understanding
on the implementation of a European research project
on coding and transmission of
high definition television signals
(COST Project 206)**

Memorandum of Understanding on the implementation of a European research project on coding and transmission of high definition television signals

(COST Project 206)

The Signatories to this Memorandum of Understanding, declaring their common intention to take part in a European research project on coding and transmission of high definition television signals have reached the following understandings:

Section 1

1. The Signatories intend to cooperate in a project to promote research on coding and transmission of high definition television signals, as they are expected to be standardized at European level (hereinafter referred to as the 'Project').

2. The main objective of the Project is to develop methods and technologies to be used for coding and transmission of high definition television signals.

The inherent possibilities of coding standards for long distance transmission as well as for distribution in local networks are to be taken into account.

In the choice of bit-rates attention should be paid to existing and evolving CEPT digital transmission hierarchical levels.

3. The Signatories hereby declare their intention of carrying out the Project jointly, in accordance with the general description given in Annex II, adhering as far as possible to a timetable to be decided by the Management Committee referred to in Annex I.

4. The Project will be carried out through concerted action, in accordance with the provisions of Annex I.

5. The overall value of the activities of the Signatories under the Project is estimated at approximately 3 million ECU at 1983 prices.

6. The Signatories will make every effort to ensure that the necessary funds are made available under their internal financing procedures.

Section 2

Signatories intend to take part in the Project in one or several of the following ways:

(a) by carrying out studies and research in their technical services or public research establishments (hereinafter referred to as 'public research establishments');

(b) by concluding contracts for studies and research with organizations (hereinafter referred to as 'research contractors');

(c) by contributing to the provision of a secretariat and/or other coordinatory services or activities necessary for the aims of the Project to be achieved.

Section 3

1. This Memorandum of Understanding will take effect for five and a half years on its signing by at least four Signatories.

2. This Memorandum of Understanding may be amended in writing at any time by arrangement between the Signatories.

3. A Signatory which intends, for any reason whatsoever, to terminate its participation in the Project will notify the Secretary-General of the Council of the European Communities of its intention as soon as possible, preferably not later than three months beforehand.

4. If at any time the number of Signatories falls below four, the Management Committee referred to in Annex I will examine the situation which has arisen and will consider whether or not this Memorandum of Understanding should be terminated by decision of the Signatories.

Section 4

1. This Memorandum of Understanding will, for a period of six months from the date of the first signing remain open for signing, by the governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and also by the European Communities.

The government referred to in the first subparagraph and the European Communities may take part in the Project on a provisional basis during the abovementioned period, even though they may not have signed this Memorandum of Understanding.

2. After this period of six months has elapsed, applications to sign this Memorandum of Understanding from the governments referred to in paragraph 1 or from the European Communities will be decided by the Management Committee referred to in Annex I, which may attach special conditions thereto.

3. Any Signatory may designate one or more competent public authorities or bodies to act on its behalf in respect of the implementation of the Project.

Section 5

This Memorandum of Understanding is of an exclusively recommendatory nature. It will not create any binding legal effect in public international law.

Section 6

1. The Secretary-General of the Council of the European Communities will inform all Signatories of the signing dates and date of entry into effect of this Memorandum of Understanding and will forward to them all notices which he has received under this Memorandum of Understanding.

2. This Memorandum of Understanding will be deposited with the General Secretariat of the Council of the European Communities. The Secretary-General will transmit a certified copy to each of the Signatories.

Done at Brussels on the twelfth day of September in the year one thousand nine hundred and eighty-four.

ANNEX I

Coordination of the Project

CHAPTER I

1. A Management Committee (hereinafter referred to as 'the Committee') will be set up, composed of not more than two representatives for each Signatory. Each representative may be accompanied by such experts or advisers as he or she may need.

The governments which took part in the Ministerial Conference held in Brussels on 22 and 23 November 1971 and the European Communities may, in accordance with the second subparagraph of Section 4 (1) of the Memorandum of Understanding, participate in the work of the Committee before becoming Signatories to the Memorandum without, however, having the right to vote.

When the European Communities are not a Signatory to the Memorandum of Understanding, a representative of the Commission of the European Communities may attend Committee meetings as an observer.

2. The Committee will be responsible for coordinating the Project and, in particular, for making the necessary arrangements for:

- (a) the choice of research topics on the basis of those provided for in Annex II, including any modifications submitted to Signatories by the competent public authorities or bodies; any proposed changes to the Project framework will be referred for an opinion to the COST Technical Committee 'Telecommunications';
- (b) advising on the direction which work should take;
- (c) drawing up detailed plans and defining methods for the different phases of execution of the Project;
- (d) coordinating the contributions referred to in subparagraph (c) of Section 2 of the Memorandum of Understanding;
- (e) keeping abreast of the research being done in the territory of the Signatories and in other countries;
- (f) liaising with appropriate international bodies;
- (g) exchanging research results among the Signatories to the extent compatible with adequate safeguards for the interests of Signatories, their competent public authorities or bodies and research contractors in respect of industrial property rights and commercially confidential material;
- (h) drawing up the annual interim reports and the final report to be submitted to the Signatories and circulated as appropriate;
- (i) dealing with any problem which may arise out of the execution of the Project, including those relating to possible special conditions to be attached to accession to the Memorandum of Understanding in the case of applications submitted more than six months after the date of the first signing.

3. The Committee will establish its rules of procedure.

4. The Secretariat of the Committee will be provided at the invitation of the Signatories by the Commission of the European Communities.

CHAPTER II

1. Signatories will invite public research establishments or research contractors in their territories to submit proposals for research work to their respective competent public authorities or bodies. Proposals accepted under this procedure will be submitted to the Committee.

2. Signatories will request public research establishments or research contractors, before the Committee takes any decision on a proposal, to submit to the public authorities or bodies referred to in paragraph 1 notification of previous commitments and industrial property rights which they consider might preclude or hinder the execution of the projects of the Signatories.

CHAPTER III

1. Signatories will request their public research establishments or research contractors to submit periodical progress reports and a final report.

2. The progress reports will be distributed to the Signatories only, through their representatives on the Committee. The Signatories will treat these progress reports as confidential and will not use them for purposes other than research work. The final reports on the results obtained will have much wider circulation, covering at least the Signatories' public research establishments or research contractors concerned.

CHAPTER IV

1. In order to facilitate the exchange of results referred to in Chapter I, paragraph 2, (g), and subject to national law, Signatories intend to ensure, through the inclusion of appropriate terms in research contracts, that the owners of industrial property rights and technical information resulting from work carried out in implementation of that part of the Project assigned to them under Annex II (hereinafter referred to as 'the research results') will be under an obligation, if so requested by another Signatory (hereinafter referred to as 'the applicant Signatory'), to supply the research results and to grant to the applicant Signatory or to a third party nominated by the applicant Signatory a licence to use the research results and such technical know-how incorporated therein as is necessary for such use if the applicant Signatory requires the granting of a licence for the execution of:

- (a) work in respect of the Project;
- (b) research and development work within the framework of the applicant Signatory's projects in the same field;
- (c) research and development work within the framework of any associated European project undertaken subsequently and in which all or several of the Signatories may be prepared to take part.

Such licences will be granted on fair and reasonable terms, having regard to commercial usage.

2. Signatories will, by including appropriate clauses in contracts placed with research contractors, provide for the licence referred to in paragraph 1 to be extended on fair and reasonable terms, having regard to commercial usage, to previous industrial property rights and to prior technical know-how acquired by the research contractor insofar as the research results could not otherwise be used for the purpose referred to in paragraph 1.

Where a research contractor is unable or unwilling to agree to such extension, the Signatory will submit the case to the Committee, before the contract is concluded; thereafter, the Committee will state its position on the case, if possible after having consulted the interested parties.

3. Signatories will take any steps necessary to ensure that the fulfilment of the conditions laid down in the present Chapter will not be affected by any subsequent transfer of rights to ownership of the research results. Any such transfer will be notified to the Committee.

4. If a Signatory terminates its participation in the Project, any rights of use which it has granted, or is obliged to grant, to, or has obtained from, other Signatories in application of the Memorandum of Understanding and concerning work carried out up to the date on which the said Signatory terminates its participation will continue thereafter.

5. The provisions of paragraphs 1 to 4 will continue to apply after the period of operation of the Memorandum of Understanding has expired and will apply to industrial property rights as long as these remain valid, and to unprotected inventions and technical know-how until such time as they pass into the public domain other than through disclosure by the licensee.

ANNEX II

General description of the work planned for the Project

1. The participants in the Project will simultaneously undertake and coordinate research and development work with the aim of developing methods and technologies to be used for coding and transmission of high definition television (HDTV) signals as they are expected to be standardized in Europe. They will exchange information and will compare results achieved.

2. Studies and research work to be undertaken in the framework of the project will concentrate mainly on:

- (a) studies in the field of signal representation taking into consideration the ongoing work in the standardization bodies and providing an input to the discussion in these bodies;
- (b) Examination of suitable transmission media and network concepts for distribution of HDTV signals;
- (c) Investigation of digital coding and bit-rate reduction techniques by computer simulation.

Each participating country may have a simulation facility capable of handling a set of HDTV signals to be agreed upon;

- (d) Development of criteria and test material and their application to the comparison and evaluation of coding algorithms;
- (e) Development of flexible signal processing hardware facilities with a sufficient degree of compatibility between the participating countries and their subsequent use in coding experiments and transmission tests.

It is intended that a major outcome of this Project will be a valuable contribution towards the introduction of public HDTV services in Europe by providing economic solutions for signal transmission.

It may also be expected that this Project will stimulate industrial interest in developing equipment for HDTV.

3. The following work will have to be carried out in particular:

- (a) select an interim standard, taking into account the studies carried out by the EBU; 'standard' here refers to the system parameters, including picture format, spatio-temporal sampling structure, bandwidth, gamma pre-correction of distortion, colorimetry, and other parameters describing signal representation;
- (b) assembly of simulation equipment for the study of signal processing techniques for HDTV;
- (c) study of bit-rate reduction techniques applicable to HDTV signals;
- (d) study of efficient error protection and correction techniques;
- (e) study of factors affecting the choice of bit-rates from the CEPT digital transmission hierarchy;
- (f) select appropriate methods for subjective tests;
- (g) develop subjective and objective criteria and produce test pictures and sequences, synthetic and natural, for the evaluation of the signal processing techniques;
- (h) carry out subjective tests to support coding studies and experiments;

- (i) make results of signal processing studies available to the EBU to assist in the formulation of a permanent HDTV standard;
- (j) investigation of possible transmission and distribution media such as satellites (12 GHz, 22 GHz, 40 GHz ...), fibre-optic cable, coaxial cable, etc.; in the case of analogue transmission only component coded signals will be considered;
- (k) design considerations for flexible hardware, taking into account the technological problems of signal processing at very high frequencies, and using the permanent standard for HDTV adopted by the EBU, if available;
- (l) implementation of flexible hardware to prove simulated coding methods and for practical demonstrations; the hardware implemented in the participating countries should have a sufficient degree of compatibility;
- (m) carry out transmission experiments, preferably using international connections.

4. The Project is planned to last five and a half years and is subdivided into three phases:

Phase 1 — preparatory (one year)

Phase 2 — theoretical studies and simulation (two years)

Phase 3 — practical implementation and experiments (two and a half years)

A general indication of the timetable for the different activities is shown in the following table:

topic	year					
	1983	1984	1985	1986	1987	1988
<i>(a) general</i>	interim	proposed			permanent	
standards, parameters, signal representation						
distribution media, network aspects						
<i>(b) specific</i>						
subjective quality test methods						
Picture material for subjective tests + experiments frame memories (stills)						
simulation facilities						
Bit-rate reduction by computer simulation						
subjective tests						
Flexible hardware, development of coding experiments						
transmission tests						

**Memorandum of Understanding
on the implementation of a European research project
on coding and transmission of
high definition television signals
(COST Project 206)**

Date of entry into force: 12.9.1984

Duration 11.3.1990

Contracting Parties	Date of signing	Date of entry into force
Germany (FR of)	12. 9.1984	12. 9.1984
France	12. 9.1984	12. 9.1984
Italy	12. 9.1984	12. 9.1984
Sweden	12. 9.1984	12. 9.1984

**Synoptic tables
of the other COST Projects in force
on 1 January 1983**

The texts of the Projects signed prior to 1 January 1983 are contained in Volume 1 (1971-1980) and Volume 2 (1981-1982) of the Collected COST Agreements.

**Agreement on the implementation of a European
concerted action project in the field of metallurgy on the topic
'Materials for gas turbines'
(COST 50/51/52) ¹**

Date of entry into force of the action: 1.7.1972

Duration: 30.6.1983

Contracting Parties	Date of signing	Date of entry into force
ECSC	23.11.1971	²
EAEC	23. 5.1978	23. 5.1978
Belgium	19.12.1973	4. 3.1976
Germany (FR of)	23.11.1971	1. 7.1972
France	23.11.1971	1. 7.1972
Italy	23.11.1971	4. 9.1974
Luxembourg	23.11.1971	9. 2.1973
Netherlands	23.11.1971	9. 4.1973
Austria	23.11.1971	9. 8.1972
Switzerland	23.11.1971	1. 7.1972
Sweden	23.11.1971	1. 7.1972
United Kingdom	23.11.1971	1. 7.1972

¹ COST Projects, Vol. 1, p. 13.

² The ECSC never ratified this Agreement.

**Convention
establishing the European Centre
for Medium-Range Weather Forecasts
(COST 70) ¹**

Date of entry into force of the action: 1.10.1975

Duration: unlimited

Contracting Parties	Date of signing	Date of entry into force
Belgium	7. 5.1973	1.10.1975
Denmark	7. 5.1973	1.10.1975
Germany (FR of)	7. 5.1973	1.10.1975
France	7. 5.1973	1.10.1975
Ireland	7. 5.1973	1.10.1975
Italy	7. 5.1973	1. 9.1977
Netherlands	7. 5.1973	1.10.1975
United Kingdom	7. 5.1973	1.10.1975
Greece	7. 5.1973	1. 9.1976
Spain	7. 5.1973	1.10.1975
Yugoslavia	7. 5.1973	1.10.1975
Austria	7. 5.1973	1.10.1975
Portugal	7. 5.1973	1. 1.1976
Switzerland	7. 5.1973	1.10.1975
Finland	7. 5.1973	1.10.1975
Sweden	7. 5.1973	1.10.1975
Turkey	2.11.1975	1. 5.1976

¹ COST Projects, Vol. 1, p. 87.

**Memorandum of Understanding
on the implementation of a European project on
electronic traffic aids on major roads
(COST 30) ¹**

Date of entry into force of the action: 18.5.1977

Duration: 30.3.1980 ²

Contracting Parties	Date of signing	Date of entry into force
EC	16. 1.1978	16. 1.1978
Belgium	31. 3.1977	31. 3.1977
Germany (FR of)	31. 3.1977	31. 3.1977
France	31. 3.1977	31. 3.1977
Italy	31. 3.1977	31. 3.1977
Netherlands	18. 5.1977	18. 5.1977
United Kingdom	31. 3.1977	31. 3.1977
Spain	16. 7.1982	16. 7.1982
Yugoslavia	6. 6.1978	6. 6.1978
Austria	31. 3.1977	31. 3.1977
Switzerland	31. 3.1977	31. 3.1977
Finland	31. 3.1977	31. 3.1977
Sweden	31. 3.1977	31. 3.1977

¹ COST Projects, Vol.1, p. 129.

² Extended until 30.3.1984.

**Memorandum of Understanding
for the implementation of a European project
on optical fibre communication systems
(COST 208) ¹**

Date of entry into force of the action: 15.12.1977

Duration: 14.12.1980 ²

Contracting Parties	Date of signing	Date of entry into force
Belgium	14. 6.1978	14. 6.1978
Denmark	14. 6.1978	14. 6.1978
Germany (FR of)	15.12.1977	15.12.1977
France	15.12.1977	15.12.1977
Ireland	15.12.1977	15.12.1977
Italy	15.12.1977	15.12.1977
Netherlands	14. 6.1978	14. 6.1978
United Kingdom	15.12.1977	15.12.1977
Spain	15.12.1977	15.12.1977
Switzerland	19. 5.1978	19. 5.1978
Finland	19. 5.1978	19. 5.1978
Sweden	15.12.1977	15.12.1977

¹ COST Projects, Vol. 1, p. 155.

² Extended until 14.12.1983.

**Memorandum of Understanding
for the implementation of a European research project
on benthic coastal ecology
(COST 47) ¹**

Date of entry into force of the action: 5.4.1979

Duration: 4.4.1984

Contracting Parties	Date of signing	Date of entry into force
EC	28.11.1980	28.11.1980
Belgium	31. 7.1980	31. 7.1980
Denmark	5. 4.1979	5. 4.1979
Germany (FR of)	5. 4.1979	5. 4.1979
France	5. 4.1979	5. 4.1979
Ireland	5. 4.1979	5. 4.1979
Netherlands	22. 5.1980	22. 5.1980
United Kingdom	5. 4.1979	5. 4.1979
Spain	27. 5.1980	27. 5.1980
Norway	22. 5.1980	22. 5.1980
Portugal	8. 4.1982	8. 4.1982
Sweden	5. 4.1979	5. 4.1979

¹ COST Projects, Vol. 1, p. 165.

**International Agreement on the setting up of an experimental
European network of ocean stations (COST 43) ¹**

Date of entry into force of the action: 29.6.1979

Duration: 28.6.1983

Contracting Parties	Date of signing	Date of entry into force
Belgium	14. 6.1978	14.6.1978
Denmark	15.12.1977	29.6.1979
France	15.12.1977	29.6.1979
Ireland	15.12.1977	29.6.1979
Netherlands	14. 1.1982	14.1.1982
United Kingdom	15.12.1977	29.6.1979
Spain	10. 4.1981	10.4.1981
Iceland	24. 3.1981	24.3.1981
Norway	15.12.1977	29.6.1979
Portugal	15.12.1977	29.6.1979
Finland	15.12.1977	29.6.1979
Sweden	15.12.1977	29.6.1979

¹ COST Projects, Vol. 1, p. 175.

**Memorandum of Understanding
for the implementation of a European research project
on measurement of precipitation by radar
(COST 72)¹**

Date of entry into force of the action: 14.12.1979

Duration: 13.12.1984

Contracting Parties	Date of signing	Date of entry into force
Denmark	13. 6.1980	13. 6.1980
Germany (FR of)	11.12.1980	11.12.1980
France	14.12.1979	14.12.1979
Netherlands	14.12.1979	14.12.1979
United Kingdom	14.12.1979	14.12.1979
Austria	26. 9.1984	26. 9.1984
Portugal	19.11.1981	19.11.1981
Switzerland	13. 6.1980	13. 6.1980
Finland	14.12.1979	14.12.1979
Sweden	13. 6.1980	13. 6.1980

¹ COST Projects, Vol. 1, p. 251.

**Memorandum of Understanding
for the implementation of a European research project
on mariculture (COST 46) ¹**

Date of entry into force of the action: 14.2.1980

Duration 13.2.1983

Contracting Parties	Date of signing	Date of entry into force
Belgium	5. 3.1981	5. 3.1981
Denmark	23.11.1981	23.11.1981
France	14. 2.1980	14. 2.1980
Ireland	14. 2.1980	14. 2.1980
Netherlands	14. 2.1980	14. 2.1980
United Kingdom	14. 2.1980	14. 2.1980
Norway	11. 6.1981	11. 6.1981
Portugal	13. 8.1980	13. 8.1980
Finland	14. 2.1980	14. 2.1980
Sweden	14. 2.1980	14. 2.1980

¹ COST Projects, Vol. 1, p. 261

**Memorandum of Understanding
for the implementation of a European research project
on the production and feeding of single cell protein
(COST 83/84) ¹**

Date of entry into force of the action: 27.3.1980

Duration: 26.3.1983

Contracting Parties	Date of signing	Date of entry into force
Belgium	31. 7.1980	31. 7.1980
Denmark	27. 3.1980	27. 3.1980
Germany (FR of)	27. 3.1980	27. 3.1980
France	27. 3.1980	27. 3.1980
Ireland	25. 9.1980	25. 9.1980
Netherlands	27. 3.1980	27. 3.1980
Spain	25. 9.1980	25. 9.1980
Yugoslavia	11. 9.1981	11. 9.1981
Switzerland	30. 6.1980	30. 6.1980
Sweden	27. 3.1980	27. 3.1980
Turkey	25. 9.1980	25. 9.1980

¹ COST Projects, Vol. 1, p. 271.

**Memorandum of Understanding
for the implementation of a European research project
on phased array antennas and their novel applications
(COST 204) ¹**

Date of entry into force of the action: 24.7.1980

Duration: 23.7.1983

Contracting Parties	Date of signing	Date of entry into force
Belgium	2. 7.1981	2. 7.1981
Germany (FR of)	13.11.1980	13.11.1980
France	17. 3.1983	17. 3.1983
Italy	24. 7.1980	24. 7.1980
Netherlands	23. 7.1981	23. 7.1981
United Kingdom	24. 7.1980	24. 7.1980
ESA	6. 9.1982	6. 9.1982
Finland	24. 7.1980	24. 7.1980
Sweden	24. 7.1980	24. 7.1980

¹ COST Projects, Vol. 1, p. 313.

**Memorandum of Understanding
for the implementation of a European research project
on influence of the atmosphere on radio propagation on
satellite-earth paths at frequencies above 10 GHz
(COST 205) ¹**

Date of entry into force of the action: 24.7.1980

Duration: 23.7.1983

Contracting Parties	Date of signing	Date of entry into force
Belgium	24. 7.1980	24. 7.1980
Denmark	24. 7.1980	24. 7.1980
Germany (FR of)	13.11.1980	13.11.1980
France	24. 7.1980	24. 7.1980
Italy	24. 7.1980	24. 7.1980
Ireland	6. 5.1982	6. 5.1982
Netherlands	23. 7.1981	23. 7.1981
United Kingdom	24. 7.1980	24. 7.1980
ESA	24. 7.1980	24. 7.1980
Austria	20. 5.1981	20. 5.1981
Portugal	27.10.1980	27.10.1980
Finland	24. 7.1980	24. 7.1980
Sweden	24. 7.1980	24. 7.1980

¹ COST Projects, Vol 1, p. 325.

**Memorandum of Understanding
for the implementation of a European research project
on maize as a basic feed for beef production
(COST 82) ¹**

Date of entry into force of the action: 24.7.1980

Duration: 23.7.1983

Contracting Parties	Date of signing	Date of entry into force
Belgium	24.7.1980	24.7.1980
Denmark	24.7.1980	24.7.1980
Germany (FR of)	24.7.1980	24.7.1980
Netherlands	24.7.1980	24.7.1980
Spain	23.1.1981	23.1.1981
Switzerland	24.7.1980	24.7.1980
Sweden	24.7.1980	24.7.1980
Turkey	15.5.1981	15.5.1981

¹ COST Projects, Vol. I, p. 335.

**Memorandum of Understanding
for the implementation of a European research project
on the early weaning of piglets
(COST 85)¹**

Date of entry into force of the action: 24.7.1980

Duration: 23.7.1983

Contracting Parties	Date of signing	Date of entry into force
Belgium	24.7.1980	24.7.1980
Denmark	24.7.1980	24.7.1980
Germany (FR of)	24.7.1980	24.7.1980
Ireland	15.1.1981	15.1.1981
United Kingdom	24.7.1980	24.7.1980
Spain	23.1.1981	23.1.1981
Switzerland	24.7.1980	24.7.1980
Sweden	24.7.1980	24.7.1980

¹ COST Projects, Vol. 1, p. 345.

**Memorandum of Understanding
for the implementation of a European research project
on mineral nutrition of basic field crops
(COST 86) ¹**

Date of entry into force of the action: 25.9.1980

Duration: 24.9.1983

Contracting Parties	Date of signing	Date of entry into force
Belgium	25. 9.1980	25. 9.1980
Germany (FR of)	25. 9.1980	25. 9.1980
Netherlands	25. 9.1980	25. 9.1980
Greece	11.12.1980	11.12.1980
Yugoslavia	11. 9.1981	11. 9.1981
Switzerland	25. 9.1980	25. 9.1980

¹ COST Projects, Vol. 1, p. 355.

**Community-COST Concertation Agreement on a
concerted action project in the field of teleinformatics
(COST 11 bis) ¹**

Decision of Community programmes: 11.9.1979

Date of entry into force of the action: 1.2.1981

Duration: 11.9.1983

Contracting Parties	Date of signing	Date of entry into force
EC	22.1.1981	1.2.1981
Spain	23.7.1981 ²	23.7.1981
Yugoslavia	6.7.1981 ²	6.7.1981
Norway	30.7.1981 ²	30.7.1981
Finland	22.1.1981	30.4.1981
Sweden	22.1.1981	1.2.1981

¹ COST Projects, Vol. 2, p. 11.

² Deposit of the instrument of accession.

**Memorandum of Understanding
for the implementation of a European research project
on the technical and economic evaluation of dual-mode trolleybus programmes
(COST 303)¹**

Date of entry into force of the action: 28.9.1981

Duration: 27.9.1984

Contracting Parties	Date of signing	Date of entry into force
Belgium	16. 6.1982	16. 6.1982
Denmark	28. 9.1981	28. 9.1981
Germany (FR of)	28. 9.1981	28. 9.1981
France	22.10.1981	22.10.1981
Italy	10. 6.1982	10. 6.1982
United Kingdom	2. 3.1982	2. 3.1982
Switzerland	16.12.1981	16.12.1981
Finland	28. 9.1981	28. 9.1981

¹ COST Projects, Vol. 2, p. 45.

**Memorandum of Understanding
for the implementation of a European research project
on high temperature materials for conventional systems of energy generation and
conversion using fossil fuels
(COST 501) ¹**

Date of entry into force of the action: 23.11.1981

Duration: 22.11.1984

Contracting Parties	Date of signing	Date of entry into force
EAEC	23.11.1981	23.11.1981
Belgium	7.10.1982	7.10.1982
Denmark	23.11.1981	23.11.1981
Germany (FR of)	23.11.1981	23.11.1981
France	23.11.1981	23.11.1981
Ireland	7.11.1983	7.11.1983
Italy	23.11.1981	23.11.1981
Netherlands	23.11.1981	23.11.1981
United Kingdom	23.11.1981	23.11.1981
Norway	23.11.1981	23.11.1981
Austria	23.11.1981	23.11.1981
Switzerland	23.11.1981	23.11.1981
Finland	23.11.1981	23.11.1981
Sweden	23.11.1981	23.11.1981

¹ COST Projects, Vol. 2, p. 61.

**Agreement between the European Economic Community
and the Swiss Confederation
on a concerted action project in the field of the detection of the tendency to thrombosis
(Medical research II) ¹**

Decision of Community programmes: 18.3.1980

Date of entry into force of the action: 24.3.1982

Duration: 31.5.1984

Contracting Parties	Date of signing	Date of entry into force
EC	24.3.1982	24.3.1982
Switzerland	24.3.1982	24.3.1982

¹ COST Projects, Vol. 2, p. 73.

**Memorandum of Understanding
for the implementation of a European research project on the use
of alternative fuels in road vehicles
(COST 304)¹**

Date of entry into force of the action: 13. 5.1982

Duration: 12.11.1985

Contracting Parties	Date of signing	Date of entry into force
EC	30. 7.1982	30. 7.1982
Denmark	13. 5.1982	13. 5.1982
Germany (FR of)	10. 6.1982	10. 6.1982
France	17. 3.1983	17. 3.1983
Ireland	7.11.1983	7.11.1983
Netherlands	13. 7.1983	13. 7.1983
Norway	13. 5.1982	13. 5.1982
Switzerland	11.11.1982	11.11.1982
Finland	13. 5.1982	13. 5.1982
Sweden	13. 5.1982	13. 5.1982

¹ COST Projects, Vol. 2, p. 83.

**Memorandum of Understanding
for the implementation of a European research project on the technical and economic
conditions for the use of electric road vehicles
(COST 302) ¹**

Date of entry into force of the action: 16. 6.1982

Duration: 15.12.1985

Contracting Parties	Date of signing	Date of entry into force
EC	15.12.1982	15.12.1982
Belgium	13. 9.1983	13. 9.1983
Denmark	16. 6.1982	16. 6.1982
Germany (FR of)	16. 6.1982	16. 6.1982
France	18.11.1982	18.11.1982
Ireland	7.11.1983	7.11.1983
Italy	14.11.1983	14.11.1983
United Kingdom	16. 6.1982	16. 6.1982
Austria	14.12.1982	14.12.1982
Switzerland	30.11.1982	30.11.1982
Finland	15.12.1982	15.12.1982
Sweden	16. 6.1982	16. 6.1982

¹ COST Projects, Vol. 2, p. 107.

**Community-COST Concertation Agreement
on a concerted action project in the field of
treatment and use of sewage sludge
(COST 68 ter) ¹**

Decision of Community programmes: 3. 3.1981

Date of entry into force of the action: 1. 7.1982

Duration: 31.12.1983

Contracting Parties	Date of signing	Date of entry into force
EC	16.2.1982	1.7.1982
Norway	16.2.1982	²
Austria	20.4.1982	28.1.1983
Switzerland	29.6.1982	1.7.1982
Finland	16.2.1982	1.7.1982
Sweden	22.4.1982	1.7.1982

¹ COST Projects, Vol. 2, p. 123.

² Norway has not ratified this Agreement.

**Cooperation Agreement between the European Economic Community
and the Kingdom of Sweden on a European research and development programme
in the field of the recycling of urban and industrial waste (Recycling) ¹**

Decision of Community programmes: 12.11.1979

Date of entry into force of the action: 1. 7.1982

Duration: 31.10.1983

Contracting Parties	Date of signing	Date of entry into force
EC	16.6.1982	1.7.1982
Sweden	16.6.1982	1.7.1982

¹ COST Projects, Vol. 2, p. 133.

**Memorandum of Understanding
on the implementation of a European project on redundancy reduction techniques
for coding of broadband video signals
(COST 211 bis) ¹**

Date of entry into force of the action: 9.12.1982

Duration: 8.12.1986

Contracting Parties	Date of signing	Date of entry into force
Denmark	9.12.1982	9.12.1982
Germany (FR of)	3. 2.1983	3. 2.1983
France	9.12.1982	9.12.1982
Italy	17. 5.1983	17. 5.1983
Netherlands	9.12.1982	9.12.1982
United Kingdom	9.12.1982	9.12.1982
Norway	4.10.1983	4.10.1983
Finland	10. 3.1983	10. 3.1983
Sweden	9.12.1982	9.12.1982

¹ COST Projects, Vol. 2, p. 147.

Recapitulatory Tables

These tables contain all the Projects signed in 1983 and 1984 and the Projects signed previously which were still in force on 1 January 1983, the latter being indicated in italics.

COST Projects (Categories I and II)

Projects	Infor- matics	Trans- port	Environmental protection		Food techno- logy	Medical research			Wood	Recycling
	<i>11 bis</i>	301	64 bis	<i>68 ter</i>	90 bis	I	<i>II</i>	III		
Decision of Community programmes	<i>11.9.79</i>	13.12.82	17.12.82	<i>3.3.81</i>	22.11.82	17.8.82	<i>18.3.80</i>	17.8.82	17.5.82	12.12.83
Signatories										
European Communities	<i>22.1.81</i>	15.4.83	3.2.83	<i>16.2.82</i>	9.12.82	3.5.83	<i>24.3.82</i>	4.5.83	28.6.83	29.2.84
Spain	<i>23.7.81</i>	20.12.83	3.2.83							
Yugoslavia	<i>6.7.81</i>		3.2.83							
Norway	<i>30.7.81</i>	20.12.83	3.2.83	<i>16.2.82</i>						
Austria				<i>20.4.82</i>						
Portugal			3.2.83							
Switzerland			3.2.83	<i>29.6.82</i>	4.5.83	3.5.83	<i>24.3.82</i>	4.5.83		
Finland	<i>22.7.81</i>	15.4.83		<i>16.2.82</i>						
Sweden	<i>22.1.81</i>	30.5.83	3.2.83	<i>22.4.82</i>	9.12.82				28.6.83	29.2.84
Turkey										
Entry into force	<i>1.2.81</i>	15.4.83	1.3.83	<i>1.7.82</i>	1.1.83		<i>24.3.82</i>			1.11.83
End of the project	<i>11.9.83</i>	14.4.85		<i>31.2.83</i>	15.12.86		<i>31.5.84</i>			
Extension			31.1.83			31.12.86		31.12.86	31.12.85	31.12.85
Category	<i>II</i>	II	II	<i>II</i>	II	I	<i>I</i>	I	I	I

COST Projects (Categories III and IV)

Projects Signatories	Telecommunications										Transport				
	202 bis	204	205	206	207	208	209	210	211 bis	213	30	302	303	304	305
Belgium	14.3.84	2.7.81	24.7.80		14.3.84	14.6.78					31.3.77	13.9.83	16.6.82		
Denmark	29.3.84		24.7.80			14.6.78	4.4.84	7.6.84	9.12.82			16.6.82	28.9.81	13.6.82	
FR of Germany	23.5.84	13.11.80	13.11.80	12.9.84	23.5.84	15.12.77	23.5.84	12.9.84	3.2.83		31.3.77	16.6.82	28.9.81	10.6.82	27.2.84
France	17.10.84	17.3.83	24.7.80	12.9.84	7.6.84	15.12.77	4.4.84	17.10.84	9.12.82	31.10.84	31.3.77	18.11.82	22.10.81	17.3.83	27.2.84
Ireland	12.9.84		6.5.82			15.12.77		12.9.84				7.11.83		7.11.83	
Italy	25.7.84	24.7.80	24.7.80	12.9.84	25.7.84	15.12.77	25.7.84		17.5.83		31.3.77	14.11.83	10.6.82		
Luxembourg															
Netherlands	14.3.84	23.7.81	23.7.81		14.3.84	14.6.78	23.5.84	7.6.84	9.12.82	31.10.84	18.5.77			13.7.83	20.12.84
United Kingdom	14.3.84	24.7.80	24.7.80		14.3.84	15.12.77	4.4.84	7.6.84	9.12.82	31.10.84	31.3.77	16.6.82	2.3.82		
Greece															
Spain						15.12.77					16.7.82				
Yugoslavia											6.6.78				
Norway									4.10.83					13.5.82	
Austria			20.5.81		14.3.84						31.3.77	14.12.82			
Portugal			27.10.80												
Switzerland	31.10.84				15.10.84	19.5.78				31.10.84	31.3.77	30.11.82	16.12.81	11.11.82	29.3.84
Finland	13.4.84	24.7.80	24.7.80		13.4.84	19.5.78	4.4.84		10.3.83	31.10.84	31.3.77	15.12.82	28.9.81	13.5.82	13.4.84
Sweden	5.4.84	24.7.80	24.7.80	12.9.84	5.4.84	15.12.77	4.4.84	7.6.84	9.12.82	31.10.84	31.3.77	16.6.82		13.5.82	27.2.84
Turkey															
Iceland															
ESA		6.9.82	24.7.80												
EC											16.1.78	15.12.82		30.7.82	27.2.84
Entry into force	4.4.84	24.7.80	24.7.80	12.9.84	14.3.84	15.12.77	4.4.84	7.6.84	9.12.82	31.10.84	31.3.77	16.6.82	28.9.81	13.5.82	27.2.84
End of the project	3.4.87	23.7.83	23.7.83	11.9.89	13.3.87		3.4.87	6.6.89	8.12.86	30.10.87		15.12.85	27.9.84	12.11.85	26.2.87
Extension ¹						14.12.83					30.3.84				
Category	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	III	III	IV	III	III
Type of Agreement ¹	MoU	MoU	MoU	MoU	MoU	MoU	MoU	MoU	MoU	MoU	MoU	MoU	MoU	MoU	MoU

¹ Extensions: COST 208 until 14.2.1983, COST 30 until 30.3.1984.

² COST 70 for an unlimited period.

³ MoU = Memorandum of Understanding; Internat. = International Convention or Agreement.

Oceanography				Metallurgy and materials science						Meteorology		Agriculture					Socio--technologies
43	43 bis	46	47	50/51/52	501	502	503	504	505	70	72	82	83/84	85	86	87	A 1
14.6.78	21.11.83	5.3.81	31.7.80	19.12.73	7.10.82	30.11.83	5.10.83	30.11.83	6.10.83	17.5.73		24.7.80	31.7.80	24.7.80	25.9.80	15. 6.83	
15.12.77	21.11.83	23.11.81	5.4.79		23.11.81	10.2.83	21.4.83		25.10.83	7.5.73	13.6.80	24.7.80	27.3.80	24.7.80		13.12.83	
			5.4.79	23.11.71	23.11.81	10.2.83	21.4.83	10.2.83	6.10.83	7.5.73	11.12.80	24.7.80	27.3.80	24.7.80	25.9.80	15. 6.83	20.10.83
15.12.77	15.12.83	14.2.80	5.4.79	23.11.71	23.11.81		21.4.83	10.2.83	5.12.84	7.5.73	14.12.79		27.3.80				15.12.83
15.12.77		14.2.80	5.4.79		7.11.83					7.5.73			25.9.80	15.1.81		15. 6.83	
				23.11.71	23.11.81					7.5.73						15.11.83	
				23.11.71			20.10.83										
14.1.82	21.11.83	14.2.80	22.5.80	23.11.71	23.11.81	13.7.83				7.5.73	14.12.79	24.7.80	27.3.80		25.9.80	15. 6.83	22. 9.83
15.12.77	21.11.83	14.2.80	5.4.79	23.11.71	23.11.81	10.2.83	21.4.83	10.2.83	6.10.83	7.5.73	14.12.79			24.7.80		15. 6.83	22. 9.83
										7.5.73			25.9.80	23.1.81	11.12.80		
10.4.81	1.3.84		27.5.80							7.5.73		23.1.81	11.9.81				
										7.5.73					11.9.81		
15.12.77	21.11.83	11.6.81	22.5.80		23.11.81											15. 6.83	
				23.11.71	23.11.81	16.1.84	26.3.84	16.1.84	24.7.84	7.5.73	26.9.84						
15.12.77	3.4.84	13.8.80	8.4.82							7.5.73	19.11.81		30.6.80	24.7.80			
				23.11.71	23.11.81		2.8.83	2.8.83	29.3.84	7.5.73	13.6.80	24.7.80			25.9.80	15. 6.83	
15.12.77	21.11.83	14.2.80			23.11.81	10.2.83	11.1.84	10.2.83	6.10.83	7.5.73	14.12.79		27.3.80	24.7.80			22. 9.83
15.12.77	21.11.83	14.2.80	5.4.79	23.11.71	23.11.81	10.2.83	21.4.83	10.2.83	6.10.83	7.5.73	13.6.80	24.7.80	25.9.80			15. 6.83	
										2.11.75		15.5.81					
24.3.81	16.12.83																
			28.11.80	23.5.78	23.11.81	14.3.83	7.6.83	14.3.83	2.12.83								15. 3.84
29.6.71	21.11.83	14.2.80	5.4.79	1.7.72	23.11.81	10.2.83	21.4.83	10.2.83	6.10.83	1.10.75	14.12.79	24.7.80	27.3.80	24.7.80	25.9.80	15. 6.83	22. 9.83
28.6.83	20.11.87	13.2.83	4.4.84	30.6.83	22.11.84	9.2.86	20.4.86	9.2.86	5.10.86	2	13.12.84	23.7.83	26.3.83	23.7.83	24.9.83	14. 6.86	21. 9.88
IV	IV	IV	III	III	III	III	III	III	III	IV	IV	IV	IV	IV	IV	IV	III
Internat.	Internat.	MoU	MoU	Internat.	MoU	MoU	MoU	MoU	MoU	Internat.	MoU	MoU	MoU	MoU	MoU	MoU	MoU

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¹ This alphabetical index classifies and cross-references the Projects according to the Contracting Parties and the subject-matter of the Project.

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